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THE ORIGIN AND VARIETIES

OF THE

SEMITIC ALPHABET

WITH SPECIMENS.

—BY—

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PREFACE.

The first edition of this little book was a reprint from the forms of *The Hebrew Student*, in which the first part was published in June, 1883. By a series of accidents the forms were destroyed in Chicago, and the tables in St. Louis, and a printed edition lost. Hence a second edition appears before much of the first is distributed. The publication of the second part unchanged in *Hebraica* at Morgan Park affords facilities for this edition. It is published mainly for distribution among the writer's personal and scholastic friends.

Since the printing of the first edition Dr. Taylor has published his superb work, "The Alphabet," a monument of erudition to which I desire to pay a tribute of respect, while I am unable to accede to his approval of De Rougé's schedule of the Egyptian prototypes.

It will be observed that in the essay I write "Semitic" in deference to common custom arising from the Greek and Latin tongues, but in the tables I write "Shemitic" in accordance with my own conviction that while scholars like Lenormant are writing Sheth and Noach the time has come when we should respect the Shemitic aspirates.

This book is written principally as an historical study. Much of its substance was published in the *Bibliotheca Sacra*, Andover, in April, 1874, under the title History in Alphabets. The tables are selections from similar ones which the writer has made, embracing most of the known ancient and modern alphabets of the world.

J. C. C. C.

CHAPTER I.

THE ORIGIN OF THE ALPHABET.

Writing was probably neither an invention nor a sudden discovery. In Egypt flourished the art of drawing, and in Egypt was spoken a language largely monosyllabic. In these two facts, alphabetic writing found a natural genesis. It was play and art to an Egyptian to draw outline figures of common objects, and an act of simple intelligence to perceive that combinations of these pictures made words and phrases by the mere short names of the objects pictured. The very children could read much without learning to spell. From the customs of the language it was to some extent natural to use the picture symbol of a syllable for a sign of its initial sound alone. Hence, at a very early time in Egypt, a limited number of picture characters in addition to a complex system of syllables and ideographs had become commonly agreed on as signs of the various simple sounds, both consonants and vowels, and constituted a real and quite complete phonetic alphabet. This appears in innumerable inscriptions and records of all kinds.

The most common Egyptian alphabet has been often published, sometimes by scholars like Lepsius, Champollion, Max Müller and Brugsch, who aim only to exhibit the phonetic values, or to trace the likeness of the hieroglyphic, hieratic and later demotic alphabets; sometimes by scholars who aim to trace the descent of the Semitic from the Egyptian alphabet. For guides in both these aims we have some bilingual inscriptions, many Egyptian transcripts of Hebrew, Persian, Greek and Roman proper names, and a large vocabulary of Coptic words which are also old Egytian.

Many of these pictures, which are called hieroglyphics, are mere outline figures. As the number of writers increased, the demand for haste, the lack of skill, the use of papyrus, or waxed or powdered tablets and the pen and stylus, produced out of the hieroglyphs a set of broken and distorted outline forms, which constituted a new and now arbitrary alphabet. In the time of the Shepherd kings, this kind of writing, which is called hieratic, had lost much of its resemblance to the hieroglyphs out of which it was formed. Such an alphabet was adopted by some Semitic people, and by them imparted to the various tribes of Syria. Of this alphabet, in the first thousand years of its use, we have no specimen, and no one can tell what changes it may have undergone in that period. When this is considered, it is remarkable that the likeness of the Semitic alphabet to Egyptian prototypes is very distinct.

It was probably not a copy of any one style or type of the hieratic alphabet, for instance like that of the "papyrus Prisse," but was made in part of familiar hieratic forms, and in part of forms in hieratic style containing the main features of several hieroglyphs which represented the same sound. It was thus partly a servile imitation, but may have embraced a few new arbitrary elements.

But the descent of the Semitic alphabet from the Egyptian cannot be correctly traced without taking into account many considerations.

It must be noted that the phonetic systems of the Semitic and Egyptian languages were very different. and also that the Semitic languages have experienced very considerable phonetic changes. Both systems must be carefully explored before any satisfactory comparison can be instituted. A search for the original Semitic phonetic elements amid the changes which have taken place, such as the loss of the *p* sound, the softening of ג, the interchanging of the sibilants and dentals, etc., although involved in many difficulties, is not hopeless.

In addition to the usual methods of inquiry, the question must be raised whether the Semitic alphabet, in its mere arrangement, furnishes any indication of the quality of its letters in respect to aspiration, sibilation, softness, etc. Such a question is not chimerical. The Semitic alphabet was not, like the Egyptian, spontaneous. It was all arbitrary, and some kind of reasonable plan of arrangement must have governed the adjuster. Moreover a selection was to be made out of sets of Egyptian letters of various degrees of aspiration, resonance, etc., and the adjuster exercised little more than ordinary intelligence if he recognized a sort of compulsion to select his letters in sets or classes.

A natural classification of Semitic phonetic elements would arrange together the resonant mutes בּ, גּ, דּ, their medial sounds ב, ג, ד, the roughly breathed mutes ו, ח, ט, the surd sounds פּ, כּ, תּ, and then their new, smooth medial sounds, and lastly their old, roughly aspirated sounds פֿ, ק, תֿ. It is almost or quite natural to arrange these sets under each other in a square of three columns. But he who should do this, could scarcely fail to attempt to bring his remaining letters into the scope of the same classification. A column of the gutturals must be made, and it would be natural that it should lead the square. Since also א in Egyptian represented a vowel, and was to do so to some extent in Semitic letters, a full representation of the alphabet would require a second writing of א, thus making it the head of a column of vowels, in which places must be found for *y*, *i*, *e*, *o* and *u*. The sibilants present themselves for arrangement. But sibilants are of two classes, pure and impure, and therefore require two columns. If any sense of symmetry is to direct the arrangement of the phonetic square, these partial columns must be placed inside the full ranks, and there are good reasons why the two lines of sibilants should be well separated. The liquids must now be placed. Semitic ר is as aspirate or semi-guttural, and belongs in the lower line. The same principle which opened the square of mutes to place the sibilants, would open again its centre to place the liquids.

The following then is the natural full exhibition of the Hebrew Phonetic elements, although imperfectly scientific:

	Gutturals.	Vowels.	Labials.	Impure Sibilants.	Palatials.	Liquids.	Aspirated Sibilants.	Dentals.
Resonant....	א	א	בּ		גּ			דּ
Smooth sonant....... ...			ב		ג			ד
Rough "	ה	ו	ו	ז	ח			ט
Semi-surd..........		י	פּ		כּ	נמל		תּ
Smooth aspirate surd.....			פ	ס	כ		שׂ	ת
Rough " "	ע		פֿ	צ	ק	ר	שׁ	תֿ

But in the alphabet the medial sounds of ב, ג, ד, כ. פֿ and תֿ needed no separate letters, as the sounds are incidental, and dependent on the precedence of vowels. Also א and ו needed each but one form of representation. Also שׁ and שׂ were too similar to need separate letters. When, therefore, numerical values were given to the letters, of course all letters were confined to single positions.

It seems possible that the arranger of the numerical values of the alphabet was influenced by a desire to range with כ all the rest of the serviles or prefixes except ב and ת, whose places were elsewhere fixed. The numerically arranged alphabet was then as follows:

	Gutturals.	Vowels.	Labials.	Impure. Sibilants.	Palatials.	Liquids.	Aspirated Sibilants.	Dentals.
Resonant................	א		ב		ג			ד
Smooth................	ה		ו	ז	ח			ט
Prefixes, semi-surds.....		י			כ	למנ		
				ס				
Aspirated surds.........	ע		פ	צ	ק	ר	ש	ת

We may now observe how the Egyptian alphabet assisted and perhaps suggested this scheme. In nearly all the languages of civilization, as Sanskrit, Hebrew, Egyptian, and their descendants, there has been a continuous softening of sounds which originally were hard, or real aspirates. All along the line there has been a movement from *b*, *gh*, *d*, *k*, *p*, *q*, *s*, *t* towards *v*, *j*, *dh*, *ch*, *f*, *sh*, *z*, *th*, while really aspirated *bh*, *gh*, *dh*, *kh*, *ph*, *q*, *sh* and *th*, were either primal or very ancient sounds. The arranger of the Semitic alphabet found the Egyptian tongue in respect to this progression of the mutes, nearly in a primitive condition, while his own language was in an intermediate stage between a primal state and modern Aramaic.

With complete naturalness, he seems first to have transcribed the vowels, the separated usage of which as pure vowels and diphthongs had become thoroughly common in Egyptian letters. For the first, he took that Egyptian hieratic character which was used most commonly for *a*, at the beginning of words. Of this letter the א of the Siloam inscription is a close copy.

For *u* the Egyptian furnished several hieroglyphs, one of which in its hieratic form approached to the hieratic character which had the value of *v* and in demotic and Coptic is *f*. The Semitic arranger seems to have merged two characters in one, as described below, in identifying vau.

The hieroglyphic and hieratic prototypes of yod (*e*, *i*, *y*) are not distinctly traceable, yet as a form much like old Semitic yod appears in later Egyptian, it is probable that the line of connection with the hieroglyphs and hieratic may hereafter be discerned. It may, however, be a fusion of three forms. It ought, we may infer, to be a kind of doubled alpha.

When the Semitic arranger had fixed in his mind the three vowels, or perhaps written them, he encountered a peculiarity of his language. His א was to him, in certain circumstances, inseparably connected with a slight separate breathing, and this breathing in a much rarer usage was associated with other vowel sounds. He deemed no other letter than א necessary for the expression of this breathing; and in this he partly followed Egyptian usage, in which this א did service also for other vowels and diphthongs. His *u* also naturally became to him, in some circumstances *v;* and the same is true of the corresponding Egyptian letter. If then he wrote his three vowel letters in a column, and desired to write or tabulate their full value, he was compelled to write on one side of his א another א to head a colum of breathings, and on the other side of his ו another ו ranging itself with the labial letters.

He sought representatives of the resonant sounds, but the Egyptian language used neither *d* nor *g*, and perhaps at that time no *b*. He was therefore obliged to take *k* for *g* and *t* for *d*. Egyptologists concur in giving the value *b* to several Egyptian letters. Nevertheless the Egyptian *p* was much more common; and the later demotic letter which was derived from it, was used for Greek *π*, *β* and *φ*. There was, however, in some use a letter which Egyptologists call *b*, and which gave a derivative which had the Greek equivalents *β*, *υ*, *π*. Either this *p* or this *b* in hieratic form could furnish the Semitic בּ and ב. We put both in our table as possible sources of Semitic ב, but probably the Egyptian prototype was the *p*, in a hieratic form now lost.

For completing the column of labials, the Egyptian letters furnished a character whose later value was both *u* and *v* and still later *f*. It was very common, and was therefore taken for ו, and is still perpetuated in the Coptic alphabet for *f*. There was another character common in the hieroglyphics with the value of *u* and *v*, but its hieratic forms tended so much towards confusion with the *f* that it seems to have been replaced by that letter both in Egyptian and Semitic writing. Yet we have put both in our table. For *p* we find a common hieratic form of the common hieroglyphic *p* tending towards the Semitic form, but this latter is much like the Egyptian hieratic *v* or *f*.

The column of palatals was to be supplied. As above stated one *k* was taken for ג. Another was needed and taken for כ. Common hieratic forms for both letters were taken. For Semitic ח the Egyptian alphabet could not be expected to offer an exact equivalent; but it gave a choice between one character which represented the harsh *h* or soft *k*, and another which sometimes represented Greek *χ*, but also *s* or *sh*. The latter, however, seems in its hieratic form to have been the prototype of ק, and the former seems in its hieroglyphic form to have furnished the model for ח.

The column of dentals was to be supplied from about eight common Egyptian representatives of *t*. Egyptologists disagree as to the derivation of the hieratic forms from the hieroglyphs representing *t*, and also as to their exact values. Three of these hieroglyphs had so nearly an identical value that they were often interchanged in spelling the same words, and they were used in foreign words for *d*, *th* and *t*. It seems probable that the half-circle *t* in its hieratic form, was the prototype of ד. Three other Egyptian characters for *t* rarely interchange and had some peculiar quality. We place two of the letters in our table as the prototype of ט and צ. The source of ת is doubtful, but is probably the hieratic form which is two lines meeting at an angle.

The column of gutturals, or breathings, was to be finished. The common Egyptian *h* became ה. The letter ע was a Semitic invention, and the only one in the alphabet. It was probably an imitation of an eye.

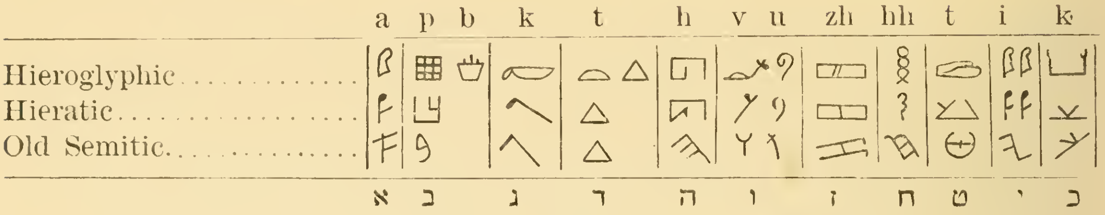
The Semitic liquids are plainly hieratic Egyptian, easily recognized and traced to their sources.

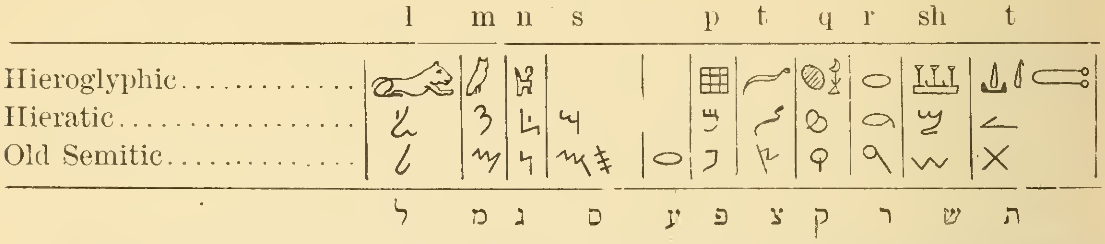
The sibilants alone remained to be supplied. For many reasons, difficulties of identification are to be expected. On one hand *d*, *t* and *th* have interchanged with *s*, *ts* and *z* in many languages. On the other hand, in many languages, *g* and *k* have softened to *ch*, *j*, *sh* and *zh*, and even to the sound of *s*. Again sibilation and aspiration are closely related, hence Indian *s* is Persian *h*, and Greek *h* in many words is Latin *s*. Sibilants, then, are of three kinds, one being aspirated, one having a dental quality and one having a palatal quality. Moreover, we have very imperfect knowledge of the sibilants in both the Semitic and the Egyptian languages, and in both they seem to have been very changeable. The Egyptian language had no *z* or *ts*, and in later times, in foreign words, used an *s* to represent a *z*, and *t* to represent צ. Hence the nearest approach to *z* in Egyptian letters should be an *s* of the class which Lepsius would call cerebral fricative, approaching a dental character. This value Lepsius gives to that Egyptian *s* which the oldest Semitic specimens resemble, and which we put in our table for *z*. Semitic ז would seem to have been nearly identical with the English *s* in *is;* hence its tendency to interchange with ס and שׂ rather than with שׁ.

For צ, transcribers use two forms of Egyptian hieroglyphic *t*, belonging in the second set mentioned above, but principally that one which we put in our table for צ. Old Semitic צ is the hieroglyph changed only so much as is natural in writing the character angularly and moving the pen from left to right. But צ seems never to have held a strong position in Semitic languages. In Aramaic words, it often became ט and ד, and in other languages was transcribed as *t*, *s* or *z*. In Arabic it has become separated into an *s* and *d* which have a harsh quality.

The old forms of Semitic *s*, ס, שׂ, and שׁ, are close copies of common Egyptian hieratic letters, but there is not and could not be, entire correspondence of values, and, indeed, the old values of all of them are somewhat uncertain. The Egyptian *s* and *sh*, which were transferred to the Semitic alphabet, if they did not have a palatal element, had an affiliation in that direction. The Semitic *s*, ס entered the Greek alphabet as *ks*, but this fact is not conclusive evidence of its original sound. The frequent interchanges of ס and שׂ in the Syrian dialects, and the disappearance of *sameck* from the Arabic alphabet, in which *sin* takes its place, imply a resemblance between *sameck* and *sin*, while the use of a single letter for both *sin* and *shin* implies a close resemblance to each other in their sounds. The hieroglyphic prototype of *sameck* is doubtful, although the Egyptian had many forms of *s*. It appears probable that both *sameck* and *shin* are derived from the same original letter, but from two different hieratic forms of it. This letter in Egyptian had nearly the value of *sh*, but with a tendency towards *kh*. It seems probable that the sound of *sameck* was *h* followed by a sibilation or hiss, and that *sin* was, like *shin*, an *s* followed by a breath or aspiration. It may be that the Semitic arranger, instead of discriminating pure and impure sibilants, classified them as, first, mutes followed by a sibilant, and second, sibilants followed by an aspiration. Probably none of the Egyptian characters representing pure *s* was transferred to the Semitic alphabet. The zigzag sameck is older than the crossbarred form, although the latter is ancient.

The following table is presented in the hope that in those points in which it exhibits novelties it may be found to be based on a correct method. Yet, while the best Egyptologists are in some respects at fault, any scheme for exhibiting the derivation of the Semitic letters must be somewhat tentative until older specimens are found.


a p b k t h v u zh hh t i k
Hieroglyphic
Hieratic
Old Semitic
א ב ג ד ה ו ז ח ט י כ


l m n s p t q r sh t
Hieroglyphic
Hieratic
Old Semitic
ל מ נ ס ע פ צ ק ר ש ת

It was not the intention of the writer in this essay to antagonize the views of any other scholar. Yet, inasmuch as the theory of M. de Rougé has been much disseminated, and has been both widely accepted by eminent scholars, and strenuously opposed by others, it is almost necessary to refer to it. M. de Rougé presented a scheme differing from the one proposed in this essay in one half the letters. While basing his scheme on great erudition in Egyptian lore, M. de Rougé seems to have erred by regarding the Semitic arranger as limited to a narrow line for selection, and indeed confining him to a period from which we have few specimens of the hieratic letters. He should have allowed more significance to the fact that the Semitic writing may be older than our specimens of the hieratic, and nearer to the hieroglyphs than they. He has not assigned sufficient importance to the probability that the Semitic arranger was not servilely copying, but was to some extent exercising his intelligent judgment in a partially arbitrary scheme. In limiting his search to a narrow line he has neglected a multitude of equally common Egyptian letters. But above all, in looking for his identifications only among forms which are proven to be old, and in rejecting forms which are suspected of being more recent, he made it impossible that he should be correct while our specimens from that remote era are so few. The forms which he rejects were very ancient, were made from the hieroglyphs as naturally as their companions were, and were very common.

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CHAPTER II.

THE VARIETIES OF THE SEMITIC ALPHABET.

The alphabets of the Semitic peoples are not merely objects of curiosity. They restore many pages of nearly or wholly forgotten history. The map of Arabia platted with its ancient letters is a picture of its tribal and religious divisions, overlaid with the lines of commercial travel and the track of war, and showing the points where literature and civilization entered, the dates of their entrances, with the courses, the helps and the hindrances of their progress. The present generation, however, still sees the subject as a new study, and by the discovery or collation of formerly unknown or neglected inscriptions has thrown upon the field of view an hitherto unimaginable illumination.

Although some confusion exists from the imperfectness and great differences of professed *facsimiles* of inscriptions, as published by different explorers and scholars, the history of the letters of the peoples north of Sinai may be supposed to be well illustrated as far back as the tenth ante-christian century. And yet, for full assurance as to the origin of the old Semitic alphabet, and its primitive forms, we must refer as much as we are able to the Southern Arabic and North African alphabets.

The southern part of Arabia is and has been almost closed to Europeans by an unfriendly climate and the ill will of the natives. The people are Arabic, speaking various dialects. Those of the extreme south were anciently called Himyarin, either from a king of Yemen, or, as some suppose, from their dusky hue. Some scholars are of opinion that in Kahtan, an ancient prince, and in Hadramaut, the name of the region, are to be recognized the biblical Joktan and Hazarmaveth, descendants of Arphaxad. That the southern Arabs had a peculiar alphabet has been known from the preservation of most of its characteristics in the letters of Abyssinia. Over these peculiarities the imagination of scholars exhausted itself in conjecturing Greek, Roman, Syriac and Numidian influences as the modifying forms. The Ethiopic literature is Christian, and its words are written from left to right, both of which facts suggest Greek or Roman influence. But these are delusive conjectures; for the Ethiopic letters bear little resemblance to Greek or Roman, while yet the Ethiopians use Greek letters for numerals, and thus emphasize the distinction. In writing from left to right the Ethiopians have only yielded to the constant suggestion and pressure of nature. The Egyptian hieroglyphics were written indifferently to right or left, and pointed or faced against the advance of the reader, as a weathercock against the moving wind. In painted or drawn figures having many parts it was equally natural to move the brush to right or left, but it is most natural for a painter or writer to place himself squarely before his tablet, and begin at the right hand. Hence the Egyptians in hieratic and demotic writing always moved from right to left, but made the several letters usually with the chief strokes as we now write, as is often shown by their unfinished ends. Most of the Semitic tribes, by linking letters, and by making connecting lines constituent elements, were constrained to preserve the same direction in writing, but it was always awkward. The Ethiopians, retaining the isolated forms of their letters, and rather erecting and squaring them, were free to feel the full force of the constant suggestion of nature to move the hand wholly toward the right, and eventually they yielded to it.

The old Himyaritic alphabet represented simple sounds, being all consonants, but the later Ethiopic, retaining the old twenty-two letters, and adding four others for *kh*, *z*, *f* and *p*, has also adjusted a system of modifications for adding seven vowels to each of the consonants, and five diphthongs to some of them, (of most of these, however, Lepsius says that they are not diphthongal, but deep gutturalizings) developing an elaborate system of elegant syllabic characters. To these the Amharic system of Abyssinia has added seven more sets by modifying seven dental consonants to represent its newer palatal sounds.

The immediate source of the Himyaritic letters, the date of their adoption, and the influences which have modified them, are not to be hastily affirmed. The superficial appearances of Greek, Roman, Syriac, Numidian and Egyptian influences are trivial and contradictory. Studied in the inscriptions brought from the Syrian Hauran and from Yemen and Ethiopia, and in the manuscripts preserved in European libraries, the Himyaritic alphabet with its products, [the Ethiopic Geez syllabarium and the still newer Amharic], appears to have originated in the old Semitic alphabet as now known, or in more archaic hieratic forms of the same, and to have been isolated at a very early day, and modified in its own peculiar and indigenous line of development[1] It joins the other alphabets of the world in telling the old story of the universal dependence of our race on the accidental or providential development of writing in Egypt, while it adds to this a story of southern Arab isolation, alike social, religious, literary and commercial.

It is necessary to study in connection with the Himyaritic letters a set of alphabets found in old Libya in northern Africa. Some curious inscriptions in Algeria and Tunis, of which some are accompanied by Punic translations, have long been known. One of them found at Dugga (ancient Tucca) has been published by Gesenius and many others, but so variously that the copies are of uncertain value. Still the alphabet was in the main discovered, although scholars differed in opinion as to certain letters, as was natural, because no one heeded any but superficial signs, or thought of the changes which have taken place in the aspiration of consonants. About 1846 M. Borsonnet, in Algiers, stumbled upon tokens of a secret writing among the Berbers. He skillfully followed his clew, and obtained a confession of the existence of the alphabet and a copy of

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[1] In the oldest Himyaritic and Ethiopic relics the *g*, *d*, *z*, *n*, *ayin*, *koph*, *sin*, *two ts*, and a second *z* from *teth* show distinctly their origin in the old common Semitic alphabet. The other liquids, *l*, *m* and *r*, are unmistakably of the same origin, but are modified. The *k* and *kh* seem to be made from old *k* after extending out its bifurcation on an arm, as in some other antique relics. Of the labials, the modern *ph* is probably from the old lozenge-shaped *p* which is nearly hieroglyphic, although from appearances only it might be thought to be derived either from old Semitic *b* or *v*, or from demotic *b*. The original *p* is probably retained in *psa*, now made like Roman T, while the other *p* (*pait*) is a variant of the lozenge-shaped *p*. The breathings א, ח, ו and י are most unlike their ancient prototypes; but the old א and ח are much like each other inverted, and seem to have come in correlated developments from old Semitic א and ח, which also are much like each other inverted. So also Himyaritic *h* and *s* which inverted are alike, may be made in the same general line of modification from old Semitic *h* and *s* which are like each other inverted; or *s* and *ts*, which in old relics are much alike, may be similarly made from old Semitic כ and צ, which are much like each other reversed, the difference disappearing when their respective minor or winglike lines are made of equal length with the main lines.

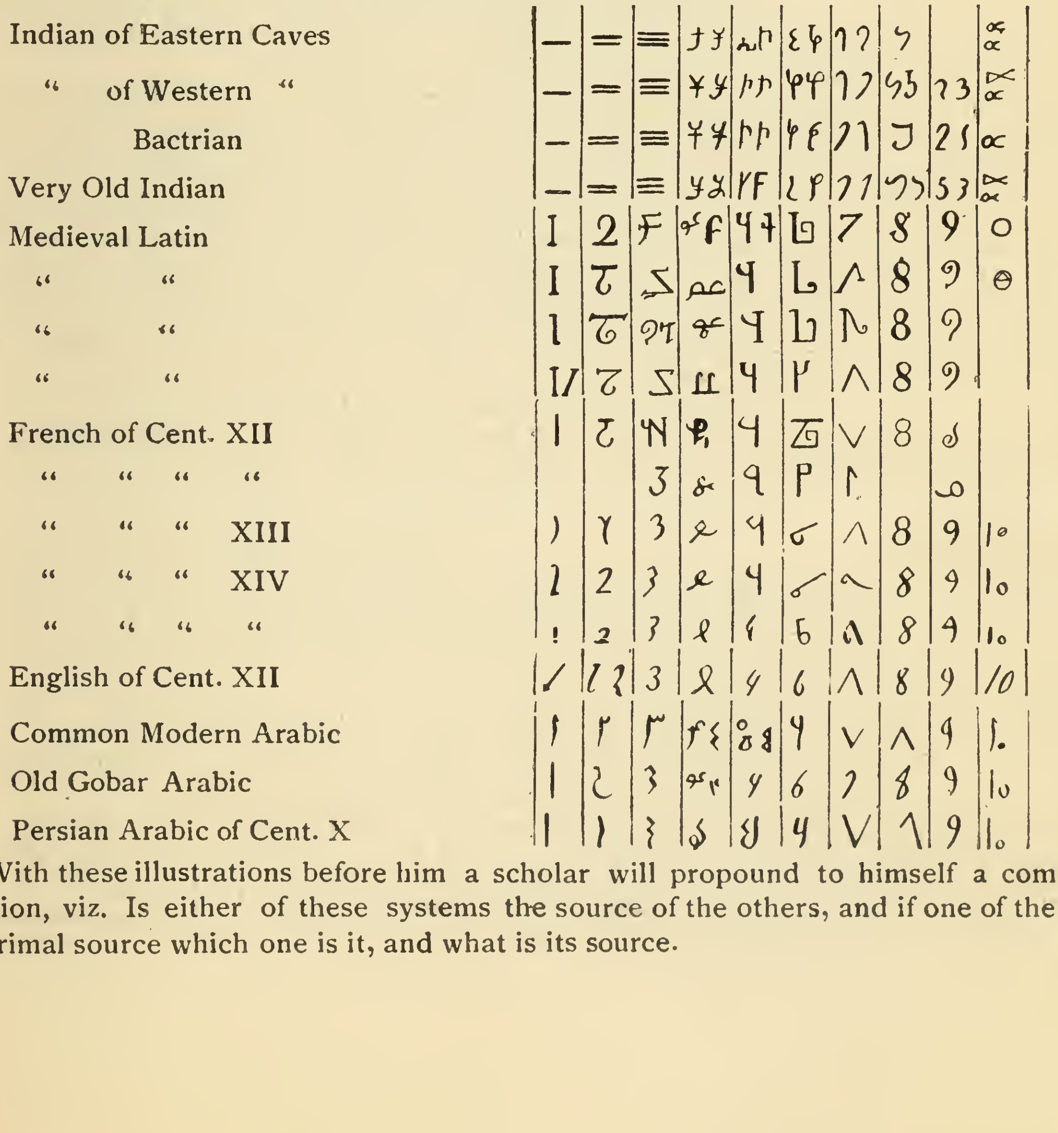
ADDENDUM TO

THE ORIGIN AND VARIETIES OF THE SEMITIC ALPHABET.

BY JOHN C. C. CLARKE.

THE ORIGIN OF NUMERICAL CYPHERS AND THE ZERO.

For the introduction of purely numerical cyphers and of the zero into Europe credit is usually given to the Arabs as borrowers from India. Certainly, so far as is now known, the oldest existent specimens of numerical cyphers are Indian, and the next are Arabic. The following illustration exhibits the essential elements of the oldest known Indian numerals, compared with Latin, French, English and Arabic.


Indian of Eastern Caves
" of Western "
Bactrian
Very Old Indian
Medieval Latin
" "
" "
" "
French of Cent. XII
" " " "
" " " XIII
" " " XIV
" " " "
English of Cent. XII
Common Modern Arabic
Old Gobar Arabic
Persian Arabic of Cent. X

With these illustrations before him a scholar will propound to himself a complex question, viz. Is either of these systems the source of the others, and if one of them is the primal source which one is it, and what is its source.

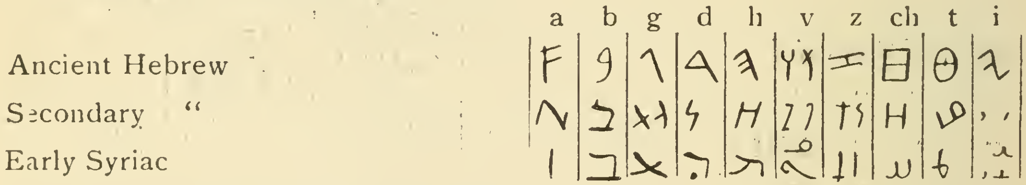
But the most acute and erudite scholarship of this age has not to itself answered these questions satisfactorily. After all researches on that line of investigation, we are thrown back upon the further question, Is there not some other system of numeral characters which is plainly older than all of those above given, and whose forms are such that the Indian, Arabic and European can all trace their derivation from it, but it cannot be derived from either of them?

The suggestions of History direct our search to Syria. There from time immemorial, without an intermission, has existed a civilization and a literature. Thence the world has drawn all its alphabets. Thence the Arabs derived the most of their science. Thence an enterprising commerce has for forty centuries radiated alike to Europe, Africa and India. Thence Persia and India drew the germs of their alphabets long before the Christian era, and thence later the Persian and Bactrian peoples drew the derived or modified alphabets which imitate what are technically called Syriac alphabets.

From a very early date the letters of the Semitic alphabet were used to represent numerical values, the first nine letters standing for units, the second for decades, the remainder for the first of the hundreds. This system was adapted by the Greeks to their own alphabet. These representations of values, combined with the more primitive systems of tally marks, and assisted by the abacus, a frame with strings and beads, were the only devices for the processes of arithmetic. The use of the zero mark and the representation of value by the relative position of the numerals were unknown during all the eras of the greatness of the ancient nations, and hence, while geometry and trigonometry revealed many of their wonders and beauties, an extended science of arithmetic was unimagined and impossible. Among a few Arabs or Moors there seems to have been a dawning conception of great possibilities in the use of letters as numerical symbols; but the germ withered unfruitful with little result except the adoption of the immortal name Algebra, from *gobar* or *geber*, The Mighty.

The Syriac alphabets are many, all being the old Hebrew alphabet variously abridged and adapted to rapid writing and to a variety of writing materials and utensils. Some of these alphabets retain considerably more of the primitive characteristics than others, but never among Syrian scholars were the ancient forms forgotten.

The following illustration exhibits three forms of the Syrian alphabet, each of which was familiar to multitudes of Aramaic scholars, and which, with various degrees of intermixture and modification tending towards the distinctive Syriac and the more greatly modified Arabic, were widely used as instruments of literary and commercial intercourse before the Christian era.


a b g d h v z ch t i
Ancient Hebrew
Secondary "
Early Syriac

The forms which we give above as Syriac and Secondary Hebrew are not conjectural forms, but are taken from actual bowls or saucers found by Layard in the ruins of Babylon,* and ascribed by scholars to the early Christian centuries. From this simple exhibition it is evident as follows;

First—Our European numerals are Syriac letters. Our 1 and 2 are Syriac letters unchanged. Our 3 has merely curled its lower limb. Our 5 and 6 have merely turned up a little. Our 4, 7 and 9 keep more nearly the Hebrew than the Syriac form. Our 8 is the eighth letter of the old Hebrew form written with one movement of a pen. Our zero is the Syriac yod, a mere dot, preserved as a dot in Arabic cyphers, but among all peoples using sharp styles or pens it is enlarged to a circle to give it visible size.

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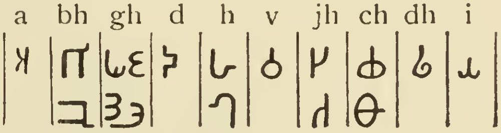
*See Plates XI, XVIII and XIX in Origin and Varieties of the Semitic Alphabet.

Second—The Gobar Arabic Cyphers and the Mediæval European cyphers, which are alike, and which only as to 2, 3, 4 and 5 vary from our modern Enropean cyphers, need ittle more than a partial inversion of these four cyphers to at once exhibit their identity with the Syriac. Indeed their peculiarities of form are such as to allow of no explanation except that they are imitations of Syriac forms by a people not accustomed to arithmetical notation or to writing Syriac letters. The suggestion that they have become inverted is scarcely a conjecture, because among the various national systems of numerals evidences of inversion are not infrequent. It must, however, be further observed that the Mediæval European 3 differs from the Gobar in preserving a closer resemblance to the Syriac G, and that both the Gobar and the old European 4 owe a part of their form to the preservation and exaggeration of the diacritic mark which the Syrians placed under their D to distinguish it from R.

Third—The explanation of the diacritic line in the Gobar 4 explains the Indian 4. Partial inversion of the Gobar and Indian 5 makes them identical. The Indian 6 is essentially a Gobar 6 elongated. The Indian 8 is a mutilated Gobar 8. The Indian 1, 2 and 3 are survivals of primitive tally marks, as in Chinese numerals, or are a mistaken analysis of the Gobar 1, 2 and 3. The Indian numerals are therefore nearly identical with the Gobar, and are derived from them or from the same Syriac source, Only the Indian ten is enigmatical. It could be conjecturally drawn out of a round zero, but there is no historical evidence of so early a use of either a zero or a round 10. If however, we examine some of the letters of the oldest Indian alphabet inverted as in the second line of the following illustration, a marked likeness to the Syriac letters and cyphers immediately appears.



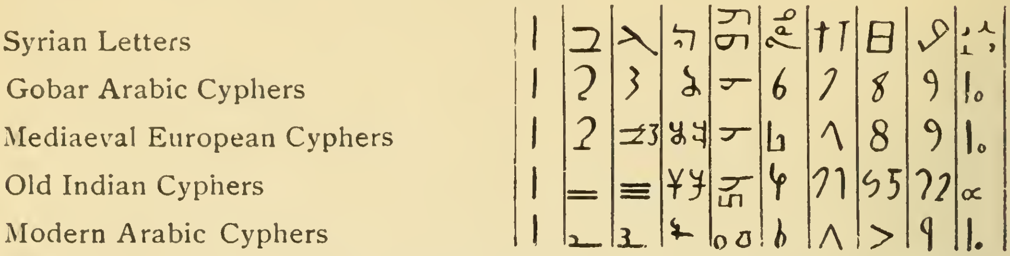
But to avert misconceptions of our meaning here, we must add that the oldest Indian letters, which we here give, are more closely like the square Aramaic or Chaldee, than like Syriac, but the square Aramaic of that age had almost all the essential characteristics of the Syriac, including some use of connecting lines.

If we accept the hint thus given, we must believe the Indian 10 to be an I (i) which has curled the connecting lines of a Syriac I a little more than the Indian I has done. Some corroboration of a such a theory may be found in the fact that a Chaldaic Pehlvi I is sometimes closely like an old Indian 10 (see Table X), and in the further fact that some more recent, but yet antique, forms of 10 in the Malayalam and Tamil of Southern India, as if acted on by an inherent tendency to reversion, are an Indian I, and an old Mahratta 10 is an I inverted. And further, of those peculiar Arab-Indian zeros exhibited by Woepke and Zotenberg, the forms which are not evidently corruptions of the old Indian 10 are identical, either in proper position or inverted, with those very Tamil and Mahratta tens which resemble an I.

Fourth—The modern, and more common, Arabic cyphers need little more than inversion to show their essential identity with the Gobar cyphers. The 5, however, has assumed the closed form of the letter H which is common in later Syriac and in both Cufic and Neshki Arabic, and found even on the Babylonien bowls. Only the Arabic 8 is difficult of explanation, and this may need only the suggestion that the modern Arabic numerals, which seem to be of Persian type, may exhibit in the 8 cypher the result of a tendency already marked in the Indian 8 and in the Pehlvi letter H h.

We give now a table of the five typical systems of the cyphers with a few of them inverted, and we may close this part of the discussion with the remark that the European modern cyphers, preserving the primitive Syriac forms of 4 and 5 more perfectly than any other systems, seem to evidence an independent derivation of European numerals from Syria, and that on the whole the Gobar, Arabic, Indian, old European and modern

European bear less evidence of the derivation of four of these out of the other one than of independent derivations directly from the Syriac.


Syrian Letters
Gobar Arabic Cyphers
Mediaeval European Cyphers
Old Indian Cyphers
Modern Arabic Cyphers

The origin of the zero cypher and of the recognition of value by position may now be reasonably conjectured. Several causes operating towards such results are apparent. Non Syriac peoples in adopting Syriac cyphers would naturally, if possible, limit the adoption to the first ten symbols, and would then be compelled to represent tens by the sign for ten accompanied by a unit sign representing the number of tens to be written. But the germ of the zero was already in the Syrian and Greek use of letter cyphers. It would seem almost impossible for an accountant using letter cyphers, and having many numbers given him for addition, to avoid assisting his eye, and guarding against hasty errors, by writing his unit symbols in one line, his tens in another and so on. The first one who did this established value by position. The Greeks commonly wrote a dot or a dash over a letter when it was used for a numeral of units, tens or hundreds, and wrote two dashes or dots to indicate thousands. The Hebrews wrote two dots under a letter to make it represent thousands From either of these customs it was easy to adopt a custom of representing the unit or decade positions by dots alone, especially if the Syriac yod dot was a familiar Symbol of 10. Value by position was in fact in the oldest Syrian and Greek letter cyphers, since units always preceded decades and so on. But value by position did not assume its full importance until the numeral symbols were reduced to ten, and the symbol of 10 became very small.

it, which, with many differences, bore some resemblance to the inscriptions of Tunis. Other discoveries soon revealed the use of other varieties of quite similar alphabets among the Tuariks, some of which preserve many elements of the inscription of Dugga. The Berbers, among whom these alphabets are found, are the light-colored tribes who are generally regarded as of Semitic race, but Lepsius classifies their language as Hamitic.

[1]Between the Himyaritic and the Berber letters there are many resemblances, as if the latter had been derived from the former. Since some of the Berber relics were co-eval with Carthage they confirm the supposed antiquity of the Himyaritic letters. Some of the Berber letters, however, while of a Himyaritic cast yet approach nearer to the Egyptian prototypes of the Semitic. Such are *b*, *g*, *d*, *z*, *l*, *m* and *r*. If we could have any doubts of the derivation of the Semitic alphabet from the Egyptian, a comparison of the Semitic, Himyaritic and Berber letters assures the common origin of all in the Egyptian. We have again, in these secret Berber alphabets, the same story of dependence on Egypt, and of ethnical seclusion. Both the Himyaritic and the Berber alphabets testify of a persistent preservation of an ancient literary culture, never sufficiently extended socially, religiously or commercially to produce such a current script as was developed in Syrian letters before the Christian era.

We may now turn to the northern Semitic letters and their illustrations of history. Of Hittite, Amalekite and Philistine letters we cannot speak. If Syrian relics older than about 1000 B. C., exist, they are probably buried under the *debris* of Syrian cities. Of larger specimens of Old Semitic letters we have the Hebrew inscription in the conduit of Siloam, of uncertain date, the Moabite stone of Mesha, of about 900 B. C., the Sidonian inscription to Baal Lebanon, the epitaph of Ashmunazzar, a king of Sidon of 600 or 500 B. C., and a Phœnician tablet from a temple at Marseilles, of about 400 B. C. All of these are of recent discovery. Of small inscriptions on Assyrian and Phœnician stones, bronzes, seals, medals, vases, etc., there are some which date from 600 to 200 B. C. Persian seals of the fifth and fourth centuries also give us the old Semitic letters with a Chaldaic cast. There is also preserved a number of Numidian, Phœnician, Punic and insular relics of various dates near the Christian era, showing modifications of the old alphabet.

Scraps from a Phœnician book of history by Sanchoniathon are preserved, but do not seem to indicate much literary culture among that people. The old common tradition of the Phœnician invention of the alphabet is shown to be unfounded. Even Phœnician commerce now appears to have been of trifling extent, both absolutely, and relatively to that of Europeans and of the people of Asia Minor. Phœnicia, of insignificant territorial extent, having only three cities, if ever Hamitic, must at a very early date have so largely recruited its population from the Semites who were flooding Syria as to have attained a complete Semitic character. Neither science, philosophy, poetry, nor commerce left permanent memorials either at home or abroad. Even the tradition that the alphabet was carried to Europe by Phœnicians has now to contend with a probability that letters were carried from Syria through Asia Minor to Europe.

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[1] In these remarks the reference is only to the letters of the oldest Libyan inscriptions. Libyan *ps* show how Himyaritic *p* (Pait) may be made from old Semitic *p*. Libyan *b*, Himyaritic *w*, and Hieroglyphic *p* are nearly identical in form, but need not be so in origin. Barth says the Berbers have no *z*, but other authorities give *z* and *zh*. From appearances, old Libyan *z* seems to have been a *t*, and the modern one is old Semitic *z* or Egyptian *s*, while the Tuarik *s* and *ts* seem to be made from old Semitic *teth* as in most of the Asiatic languages that adopt the Arabic alphabet.

Whoever named the letters had lost the knowledge of their origin and was ignorant that originally the letters faced towards the right.

The letters of all Syrian relics show that the old Semitic letters remained for fifteen centuries or more without much change. They had assumed at the first the characteristics of a writing with a reed-pen on papyrus, and no changes seem to have been introduced which indicate either such ornamentation as is developed by devotion to literature as a fine art, or such modification as results from the hurry of business or of much writing. A tendency to change, aggravated by unskillful penmanship, haste, the nature of writing materials and increased use, appears as early as the captivity of Israel, although in carefully made inscriptions the old forms were long afterwards preserved. Letters on Assyrian bronzes, Israelite and Persian seals and Punic and insular inscriptions, show tendencies toward rounding triangular loops, opening loops and circles, dropping small parts and joining letters together. These changes progressed so that before the Christian era four distinct styles of letters were added to the older ones.

The first appeared in Algiers, Tunis, etc., and is called Numidian. It maintained the separateness of the letters, but abbreviated them, and formed them rudely. Its changes are such as indicate isolation from primitive sources and recklessness of them, with a considerable amount of use. It corrupted *aleph* and *mem* to mere crosses, dropped *samekh*, often reduced *b*, *d*, *z* and *n* to mere short lines. as also did the Syriac and Arabic, and in other respects it resembled Arabic and Syriac without their ligaments. It was a dying alphabet of an effete people, and passed out of use soon after the Christian era.

The second style is found in the heart of Syria or northern Arabia. This modified its letters into a flowing type adapted to rapid writing. It dropped considerable parts of letters, and added extended lines and limbs to connect letters. Eventually, it established these ligaments as essential parts of letters. This style bears the general name of Aramaic or Syriac. It includes a considerable number of varieties, covering a development period of several centuries before and after the Christian era. When half developed it bore the name of Estranghelo, was common in Syria, and preserved to the Syrians the Hebrew and Christian scriptures and a considerable literature. Its various forms bear testimony to much use alike in a busy mercantile life, and in facilitating an extended literature and in ministering to a luxurious civilization. Some of the characteristics of the cursive Syriac style appear in all the Chaldaic, Aramaic and Arabic writing, after the Macedonian period, giving tokens of much commercial, literary and political intercourse, while the stoppage of crystallization of certain sets of forms at various stages of development indicates sharply drawn lines of ethnical and religious separateness.

Of partially developed Syriac letters, one of the oldest specimens was found inscribed on lead as a burial tablet at Abushadr in Babylonia, and published by Bunsen. Another remains in relics of a semi-Gnostic sect of Babylonia of the first or second century, of whom some thousands still remain near Bassorah, who are variously called Sabæans, Zabians, Mendæans, Mendaites, Nazareans, Nasoreans, Syro-Galileans, Mendai Jahia, Disciples of John Baptist, and Pretended Christians. This alphabet is a syllabary, the letters being much simplified, and each vowel being joined to its preceding consonant. Four manuscripts in this character are preserved in the British Museum. Of the Estranghelo letters there are many varieties, in different relics, formed with various degrees of skill and taste. Since the Christian era the Estranghelo has been much used. The Adlerian MS. of the New Testament is written in a modified Estranghelo. While the Estranghelo letters show cursive forms and ligaments, they are yet usually written separately. This style of the alphabet shades away into another of more simplified and more connected letters, which are usually called Peshito, and associated with the Peshito scriptures. It is a style adapted to free writing in the common business of a cultivated people, and was often quite elegant. Other varieties of the Estranghelo were and are used for title pages, initials and ornamental writings. The Estranghelo and Peshito styles must have existed together at an early date about the Christian era, and they are the parents of the modern Syrian letters somewhat used by the Syriac Christians on the Malabar coast of Hindustan, and by the Nestorians and other Jacobite Christians. They were also somewhat influential in the formation of the Arabic style, of which we have next to speak.

The third of those of which we have spoken as four new general styles seems to have had its *habitat* in Petra, and the region from the Hauran to Sinai. Its older forms are found in numerous inscriptions in the Nabathean region east of the Jordan and the Dead Sea, and in those once puzzling inscriptions in and near Wady Mukatteb near Sinai. Its characteristics are a greater slurring and simplification of forms, and an increased use of connecting lines. The Nabathean letters generally retain considerable resemblance to the old Semitic and the Syriac, but the Sinaitic letters carried the process of simplification so far as to make *a*, *b*, *z*, *l*, *n* and *r* often simple short lines undistinguishable from each other. The inscriptions are so numerous as fully to illustrate the course of modification. Those of the Hauran bear testimony to intelligence and culture in the once strong Nabathean kingdom. Those of the Sinaitic region were long supposed to be relics of the migration of the Israelites, but they are found to be simple memorials of Aramaic and Arabic visitors, probably to a heathen shrine. Some are in letters essentially Syriac or Palmyrene, and some have Greek accompaniments. Most of them begin with the word שלם. They evidence a general diffusion of the use of letters among the Nabatheans. They probably date from two centuries before the Christian era to three after it. The alphabet was first deciphered by Prof. E. E. F. Beer, in 1839. It is a very rude writing, most of the Sinaitic inscriptions being only shallow scratches. Yet this rude writing, very little changed, is the elegant Cufic and the useful Arabic. Of these, the former is an artistic, tasteful style, usually heavily written or painted, used in showy inscriptions and manuscripts in early Mohammedan times, and deriving its name from the city of Cufa near Bagdad. The other, the common Arabic, called Neshki and Hat, holds about the same relation to the Cufic that the Peshito does to Estranghelo. In the Cufic, by the assimilation of *b* and *t*, *z* and *r*, *g* and *ch*, *s* and *sh*, and *p* and *q*, the alphabet was reduced to seventeen forms, and of these *aleph* and *lamedh* much resembled each other, as did also *gimel* and *ayin*. The Neshki so modified its style as to make the same seventeen forms very simply, while by the use of dots it makes these letters represent nine additional sounds, viz., the remaining five of the old alphabet, three peculiar linguodentals, aspirated *cheth* and *ghain*, and the division of *tsadhe* into an *s* and a *d*.

The Neshki characters have now remained essentially unchanged for twelve or fifteen centuries, protected by Mohammedan reverence, and serving the purposes of an immense literature and of the commerce of a vast region. They are adopted for the literary purposes of the Persians, Tartars and Mohammedans generally, with some additions by diacritic points and with some changes of the sounds to suit the softer tones of these languages. The Arabic letters are adjusted to the reed-pen and flowing ink on smooth surfaces, but have been adapted to very ornate and fantastic designs with much involution for monograms and inscriptions. Of other old varieties, those found at Persepolis are interesting as relics of the early Arabic culture, as is also the Mauritanian, which in style is between the Cufic and the Neshki, and is an interesting testimony to North African culture. Also a curious Saracenic alphabet, called Hagarene, has been preserved. It is made from the Neshki, but by diacritic points increases its characters to forty-one. Instead of using the ordinary ligamental parts of the letters it writes on one continuous base line the fundamental forms of all the letters in a very stiff and angular way.

The Arabic, above all the other Semitic alphabets, carries in itself the tokens of its extensive use. A student examining it may say at once, Here is an alphabet with a history, an alphabet that has done something.

The fourth and last general class of modified letters which was formed from the old type by process of modification is one which preserves the letters each as unconnected majuscules or uncials, but has adopted more or less of the variations introduced by the cursive Syriac styles. All such alphabets carry their own evidence that they had been used only to a limited extent, were confined in narrow geographical limits, and were crystallized or buried by events which destroyed the political life of the people who used them. In this class belong the Palmyrene, the Samaritan and the Hebrew letters.

The Palmyrene letters, relics of the city of Palmyra or Tadmor, are known in[1] few inscriptions, some of which are now in England and Rome. The extraordinary differences between the published *facsimiles* of these few inscriptions well illustrate the difficulties which hinder the readers of old inscriptions. As published by Cornelis de Bruyns and the "Philosophical Transactions" they are more curious than legible, many of them having letters looking like our common Arabic[2] numerals. Rhenferd and others blundered grievously in interpreting them, but by the aid of the bilingual tablets they are intelligible. There is much difference in the care and skill with which they have been carved. In essentials of outline they have the characteristics of the Estranghelo Syriac, and of Chaldaic Hebrew, but are produced in a chirography that makes them very peculiar. Their dates all fall between A. D. 84 and 257. They are of little importance except as curious illustrations of the oddities of Semitic isolations, being trifles in comparison with the Greek characteristics of Palmyra.

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[1] Only fifteen were known to Gesenius, ten of which are bilingual. Wood, "The ruins of Palmyra," London, 1753, and Swinton in the "Philosophical Transactions," Vol. 48, have given well the four that are at Oxford. One of those at Rome was published inverted in the "Philosophical Transactions," Vol. 19, it being in 1696 in a wall in a vineyard near Rome. A much improved representation of it was given by Gesenius in Ersch and Gruber's Encyclopedia. The stone bears a Latin version which explains the Syriac. The two that are at Rome have been quite well published by Lanci. Those at Oxford have been well given by M. A. Levy in the "Zeitschrift der Deutschen Morgenlandischen Gesellschaft" for 1864. One may see further Barthelemy, Spon's "Miscellanea," Irby and Mangles, Rosenmueller's "Bibliotheca Geographica," vols. I. and II., etc.

[2] In one inscription they give such a figure five times, which closely resembles an Estranghelo Ƴ but is not recognized by Gesenius, Bunsen or Hoffmann as Palmyrene. *d*, *k*, *p*, and *r* are sometimes much like 3, and and *v* sometimes resembles 2, while *teth* is like 6. So also in some Sinaitic inscriptions as published in Gage's "Studies in the Bible Lands" there are combinations much like 2967, and 955, and 19759, and 956765.

The Samaritan alphabet is the name commonly given to the letters of a remnant of people about Nablus, at Mt. Gerizim, a mixed race equally pretentious and uncertain alike in letters and religion. They have long claimed great antiquity for some manuscripts of the Pentateuch, one of which professes to have been made by Abisha, a grandson of Aaron, and to have been saved from the burning of Zerubabel's temple.[1] The whole story of the Samaritans is a tissue of fiction. The Pentateuch of the Samaritans is strongly marked with late Chaldaic and Syriac features of language and text. The Aramaic character of the language is known to all Semitic scholars. The divergencies of the text from the Hebrew have been very fully described in many issues of the *Bibliotheca Sacra*, by Rev. B. Pick, of Allegheny, Penn., an erudite and skillful Hebraist. The Samaritan letters are as different from the primitive Semitic as the German are from the old Latin. [2]Not a single letter retains its pristine form. There are many differences of style in the MSS., and in an old inscription reciting the Decalogue at Nablus[3] which some ascribe to A. D. 546, and in the letters as given from MSS. by Gesenius. The Samaritans and their alphabet are but a little drift in one of the eddies of the waves that have so long surged in Syria. The *detritus* is much mixed and abraded, but the people have not been destitute of taste and painstaking in using and preserving what the wrecking has left to them. Their pretensions are now but a phase of the loss of national memory. The vaunted MSS. cannot probably be older than the eleventh Christian century.

Lastly. In the fourth class stand the modern Hebrew letters. Of ancient Hebrew relics there are the recently discovered inscription in the conduit of Siloam, which is evidently quite primitive, and some small carvings on stone which de Vogüé ascribes to centuries VII. and VI. B. C. Of assured Israelite relics older than the Maccabean period we have in fact scarcely anything. Of coins of the second and first centuries B. C. there are many. Of small inscriptions of the Christian era there is a trifling number. Of inscribed bowls from Babylonia there are several dating between the third and seventh Christian centuries. There are scattered in the world many medals professing to be ancient Hebrew coins, on which the letters are of modern Hebrew style, and of course they are worthless. Indeed they are now repeatedly multiplied by galvanic processes, sometimes in copper from silver and back from copper to silver. Perhaps, because it has been so much an object of interest, the Hebrew alphabet has been much the subject of misconception and unsustained pretension. Fry's "Pantographia," along with much palæographical matter publishes seventeen styles of the Hebrew alphabet under the names of "Alphabet of Adam, Noah, etc." They are merely slight alterations of the modern Hebrew alphabet, and of no historical value. Joseph Hammer published in London in 1806 a small volume which professes to give an Arabic work of Ahmed Ben Abubekr Ben Wakshih, of A. D. 855, but in this volume only the Cufic is correct, and all the rest is imposture.

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[1] Dr. Rosenmueller in the Zeitschrift d. D. M. G. for 1864 gives the alphabet of this MS. which is almost identical with that of a MS. of the eleventh Christian century which is in the Royal Library at Paris, and of which a *facsimile* is published in Sylvester's Palæographic Universelle.

[2] The *k*, *m*, *n* and *p* have plainly the connecting lower line which originated in the Syriac. The *k* is in all respects Aramaic. The *zain* and *samek* are scarcely recognizable as Semitic of any style. The *l* has the late peculiarity of standing above the line. The *qoph* is thoroughly Hebraic of the modern type. The *teth* is decidedly Syriac as on the late potteries of Babylonia.

[3] This inscription is given in Zeitschrift d. D. M. G. for 1859, p. 279, and again in 1860, p. 622, with extraordinary difference.

The oldest Hebrew differs from other primitive Semitic alphabets only in its *vav* and *tsade*, which, however, are evidently derived from the old sources of all. The few specimens which we have of the old Hebrew do not give us its *gimel*, *teth*, *samekh*, and *pe*. While on the coins of the Jews (B. C. 106 to A. D. 135), the letters are in the antique style, but with some tendency towards those forms which afterwards became distinctive in the Samaritan, there appear in all other Hebrew relics after the Christian era the peculiarities of modern Hebrew letters. The same modifications which constitute the distinctiveness of the Estranghelo Syriac, and also to some extent of the Nabathean, were made very considerably in the Hebrew. Indeed Hebrew and Estranghelo, in their essential outlines, can be written so as to differ very little. The Hebrew like the Syriac and Arabic has opened and flattened the loops and angles of ב, ד, ז, כ, נ, ע, פ, and ר. It has adopted as characteristics the heavy top and base lines, but if these are made thin, and only their outlines are retained, nearly all its letters are essentially Syriac forms. It has in its letters adopted as essential elements the Syriac ligamental lines of ב. כ, נ. פ and צ and owes its use of two forms of ךכ, םמ. ןנ, ףפ and ץצ to their development in the Syriac and Nabathean, from which it adopted them in the development period when connected and separated forms were both in use, and when the use of ligaments was governed by taste, convenience or skill.

In more modern times, writers of Hebrew have adopted styles which are called Script and Rabbinical letters. These, although somewhat abbreviated, and usually written small, are still separated or majuscule letters. One style of these is made familiar by Hebrew grammars, but many other varieties are used in Europe, and probably others elsewhere.[1]

The Hebrew alphabet, like all others, is a reflection of the national history. It indicates, as the characteristic of national history during the period of its development, limited area, Syriac surroundings, a strong Chaldaic impress, a literary revival under influences of Greek and Roman taste before the development of European minuscule writing, then a loss of ethnical concentration and theological vigor, after which the old things became embalmed in veneration.

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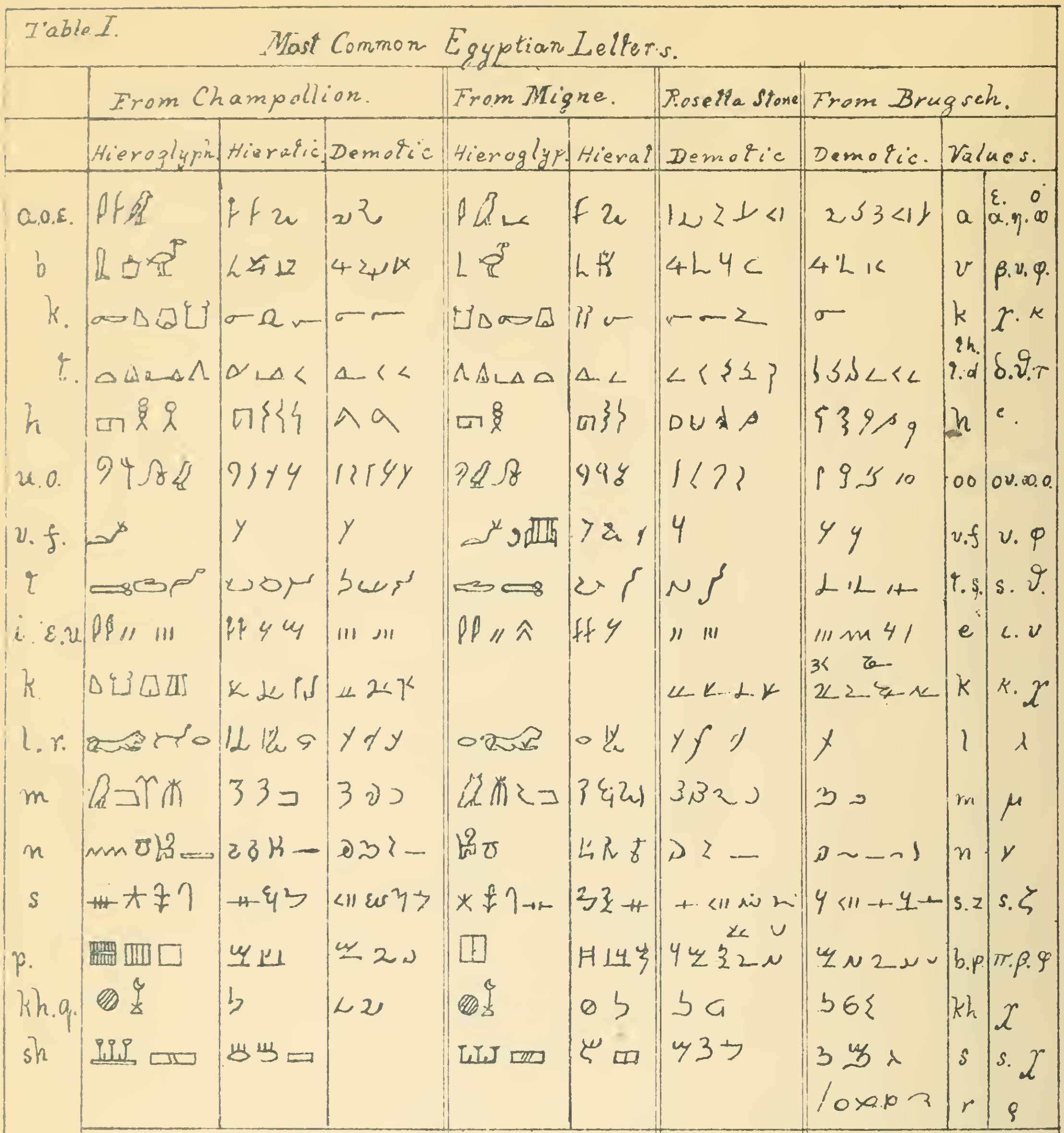
[1] Balhorn's "Alphabete" gives four varieties. Prof. Tuch in 1772, in his book "Tentamen de Variis Codicum Hebraicorum," gave fourteen varieties, but nine of these are nearly identical.

Table I.

Most Common Egyptian Letters.


From Champollion.
Hieroglyph.
Hieratic
Demotic
From Migne.
Hieroglyp.
Hieral
Rosetta Stone
Demotic
From Brugsch.
Demotic.
Values.

	Values.	
a.o.ε.	a	ε. o α.η.ω
b	v	β.υ.φ.
k.	k	γ.κ
t.	th. t.d	δ.ϑ.τ
h	h	c.
u.o.	oo	ου.ω.ο.
v.f.	v.f	υ.φ
t	t.s.	s.ϑ.
i.ε.u	e	ι.υ
k	k	κ.χ
l.r.	l	λ
m	m	μ
n	n	ν
s	s.z	s.ζ
p.	b.p	π.β.φ
kh.q.	kh	χ
sh	s	s.χ
	r	ρ

From Champollion.	From Migne.	Rosetta Stone	From Brugsch.
"Précis du Système Hiéroglyphique." Paris. 1828	Nouvelle Encyclopedie Vol. 47.	Philomathean Soc. of Univ. of Pennsylvan. M.S. Vol. 1857.	Dr. Henri Brugsch "Grammaire Démotique". Berlin. 1855. Memoire etc. Z.D.M.G. 1852.

J.C.C. Clarke.

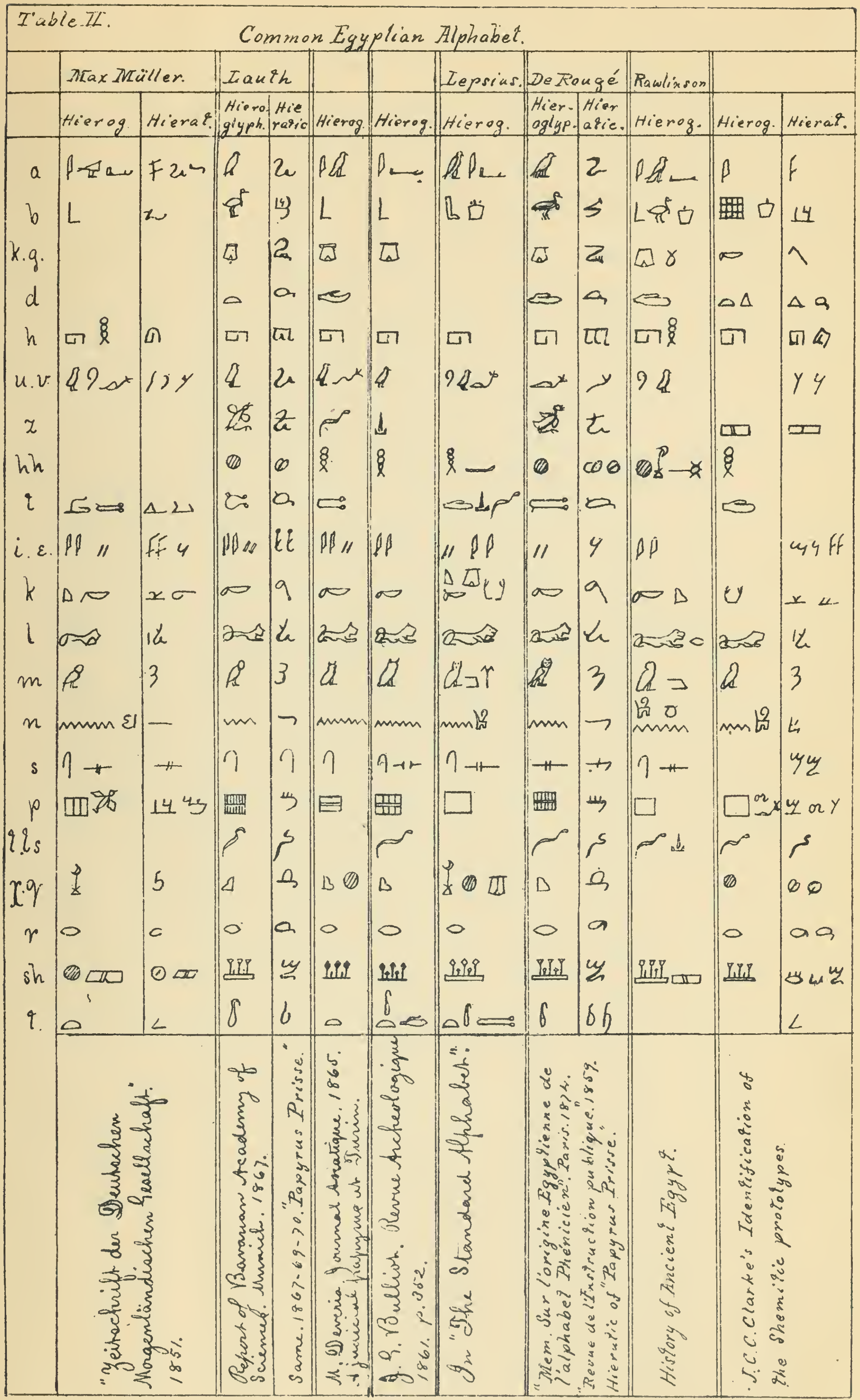


Table II.

Common Egyptian Alphabet.

Max Müller.
Lauth
Lepsius.
De Rougé
Rawlinson
Hierog.
Hierat.
Hieroglyph.
Hieratic
Hierog.
Hierog.
Hierog.
Hieroglyp.
Hieratic.
Hierog.
Hierog.
Hierat.
a
b
k.g.
d
h
u.v.
z
hh
t
i.e.
k
l
m
n
s
p
22s
Ꮖ.q
r
sh
t.

"Zeitschrift der Deutschen Morgenländischen Gesellschaft." 1851.

Report of Bavarian Academy of Sciences. Munich. 1867.

Same. 1867-69-70. "Papyrus Prisse."

M. Devéria Journal Asiatique. 1865. + funéraire Papyrus at Turin.

J. G. Bullist. Revue Archéologique 1861. p. 352.

In "The Standard Alphabet".

"Mem. Sur l'origine Egyptienne de l'alphabet Phénicien". Paris. 1874.
"Revue de l'Instruction publique. 1857.
Hieratic of "Papyrus Prisse."

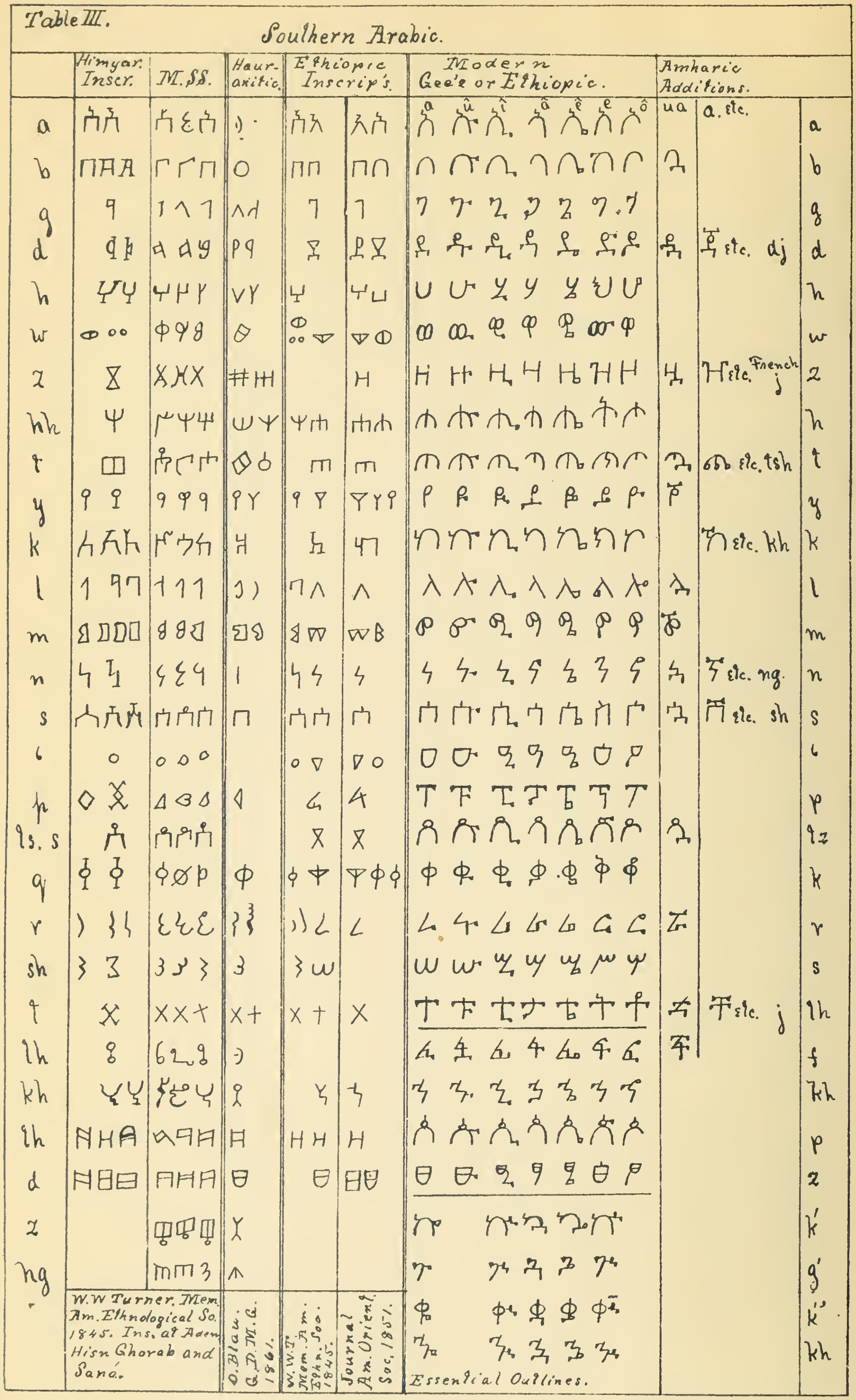
History of Ancient Egypt.

J. C. C. Clarke's Identification of the Shemitic prototypes.

J. C. C. Clarke.

Table III.

Southern Arabic.


Himyar. Inscr.
M.SS.
Haur-anitic.
Ethiopic Inscrip's.
Modern Geez or Ethiopic.
Amharic Additions.
a
b
g
d
h
w
z
hh
t
y
k
l
m
n
s
'
p
ts. s
q
r
sh
t
th
kh
th
d
z
ng
'
ua
a. etc.
etc. dj
etc. French j
etc. tsh
etc. kh
etc. ng.
etc. sh
etc. j
a
b
g
d
h
w
z
h
t
y
k
l
m
n
s
'
p
tz
k
r
s
th
f
kh
p
z
k'
g'
k'
kh
W.W Turner. Mem. Am. Ethnological So. 1845. Ins. at Aden Hisn Ghorab and Saná.
O. Blau. Z.D.M.G. 1861.
W.W.T. Mem. Am. Ethn. Soc. 1845.
Journal Am. Orient. Soc. 1857.
Essential Outlines.

J.C.C. Clarke.

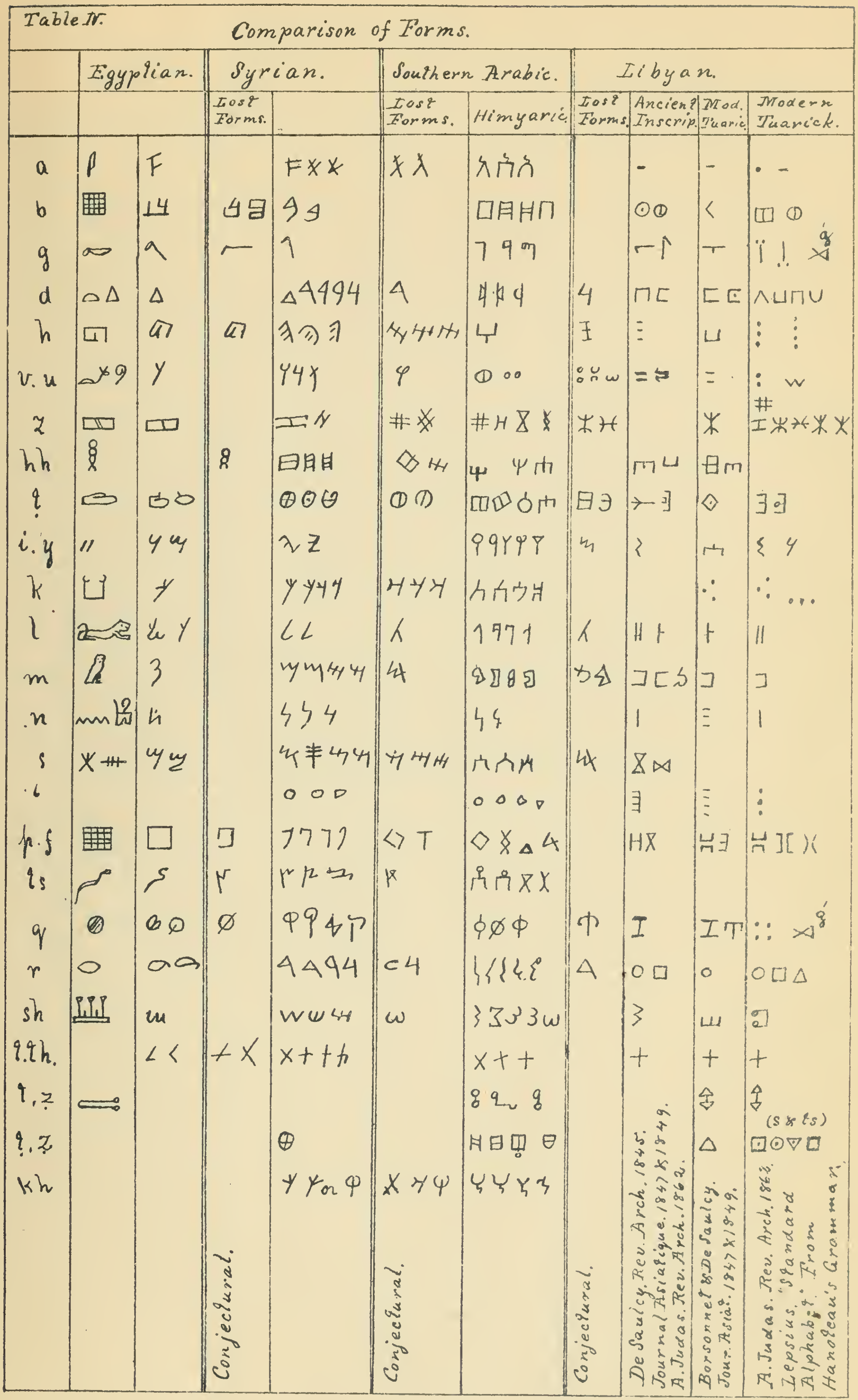


Table IV.

Comparison of Forms.

	Egyptian.		Syrian.		Southern Arabic.		Libyan.			
			Lost Forms.		Lost Forms.	Himyaric.	Lost Forms.	Ancient Inscrip.	Mod. Tuaric.	Modern Tuarick.
a										
b										
g										
d										
h										
v. u										
z										
hh										
ṭ										
i. y										
k										
l										
m										
n										
s										
ʿ										
p. f										
ts										
q										
r										
sh										
t. th.										
ṭ. z̤										
ṭ. ẓ										(s & ts)
kh										
			Conjectural.		Conjectural.		Conjectural.	De Saulcy. Rev. Arch. 1845. Journal Asiatique. 1847 & 1849. A. Judas. Rev. Arch. 1862.	Borsonnet & De Saulcy. Jour. Asiat. 1847 & 1849.	A. Judas. Rev. Arch. 1862. Lepsius, 'Standard Alphabet.' From Hanoteau's Grammar.

J. C. C. Clarke.

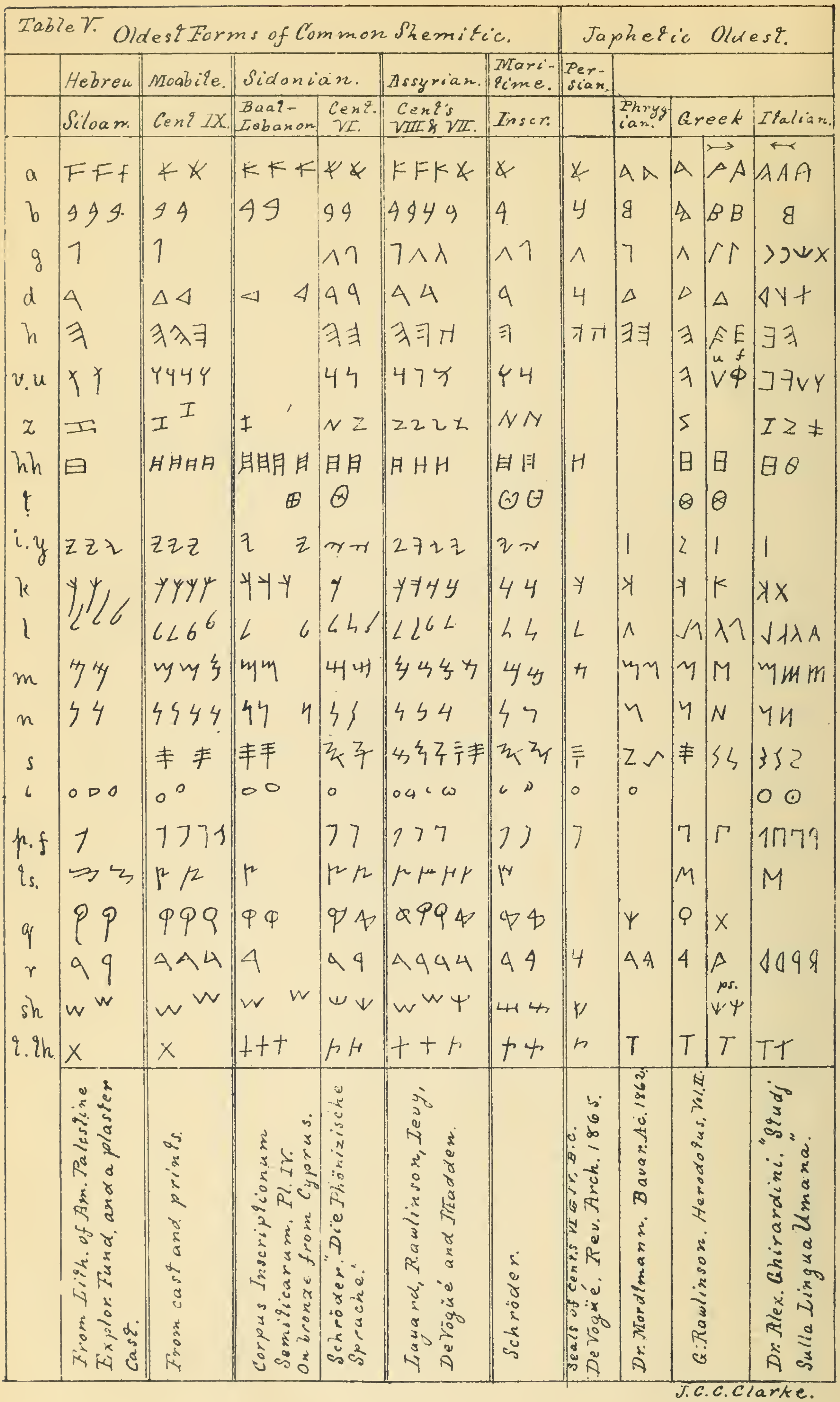


Table V. Oldest Forms of Common Shemitic.							Japhetic Oldest.			
	Hebrew	Moabite.	Sidonian.		Assyrian.	Maritime.	Persian.			
	Siloam.	Cent IX.	Baal-Lebanon	Cent. VI.	Cent's VIII & VII.	Inscr.		Phrygian.	Greek		Italian.
	From Lith. of Am. Palestine Explor. Fund, and a plaster cast.	From cast and prints.	Corpus Inscriptionum Semiticarum. Pl. IV. On bronze from Cyprus.	Schröder. "Die Phönizische Sprache."	Layard, Rawlinson, Levy, DeVogüé and Madden.	Schröder.	Seals of Cent.s VI & V. B.C. De Vogüé. Rev. Arch. 1865.	Dr. Mordtmann. Bavar. Ac. 1862.	G. Rawlinson. Herodotus, Vol. II.		Dr. Alex. Ghirardini. "Studj Sulla Lingua Umana."

a, b, g, d, h, v. u, z, hh, ṭ, i. y, k, l, m, n, s, ‘, p. f, ts., q, r, sh, t. th.

J. C. C. Clarke.

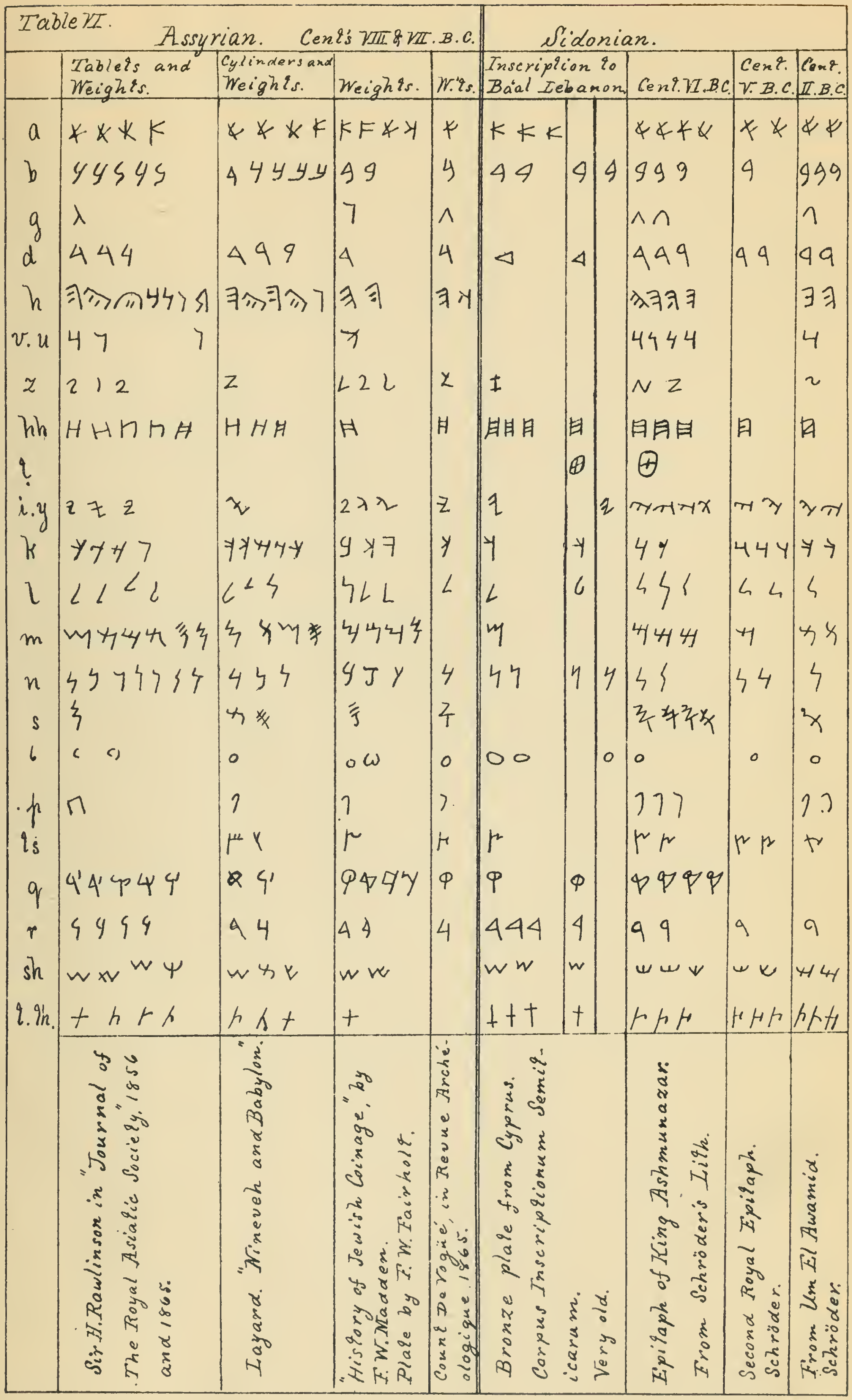


Table VI.
Assyrian. Cent's VIII & VII. B.C.
Sidonian.
Tablets and Weights.
Cylinders and Weights.
Weights.
W'ts.
Inscription to Baal Lebanon.
Cent. VI. B.C.
Cent. V. B.C.
Cent. II. B.C.
a
b
g
d
h
v. u
z
hh
ṭ
i. y
k
l
m
n
s
ʿ
p
ṭs
q
r
sh
t. th.

Sir H. Rawlinson in "Journal of The Royal Asiatic Society," 1856 and 1865.

Layard. "Nineveh and Babylon."

"History of Jewish Coinage," by F. W. Madden. Plate by F. W. Fairholt.

Count De Vogüé, in Revue Archéologique 1865.

Bronze plate from Cyprus. Corpus Inscriptionum Semiticarum. Very old.

Epitaph of King Ashmunazar. From Schröder's Lith.

Second Royal Epitaph. Schröder.

From Um El Awamid. Schröder.

J. C. C. Clarke.

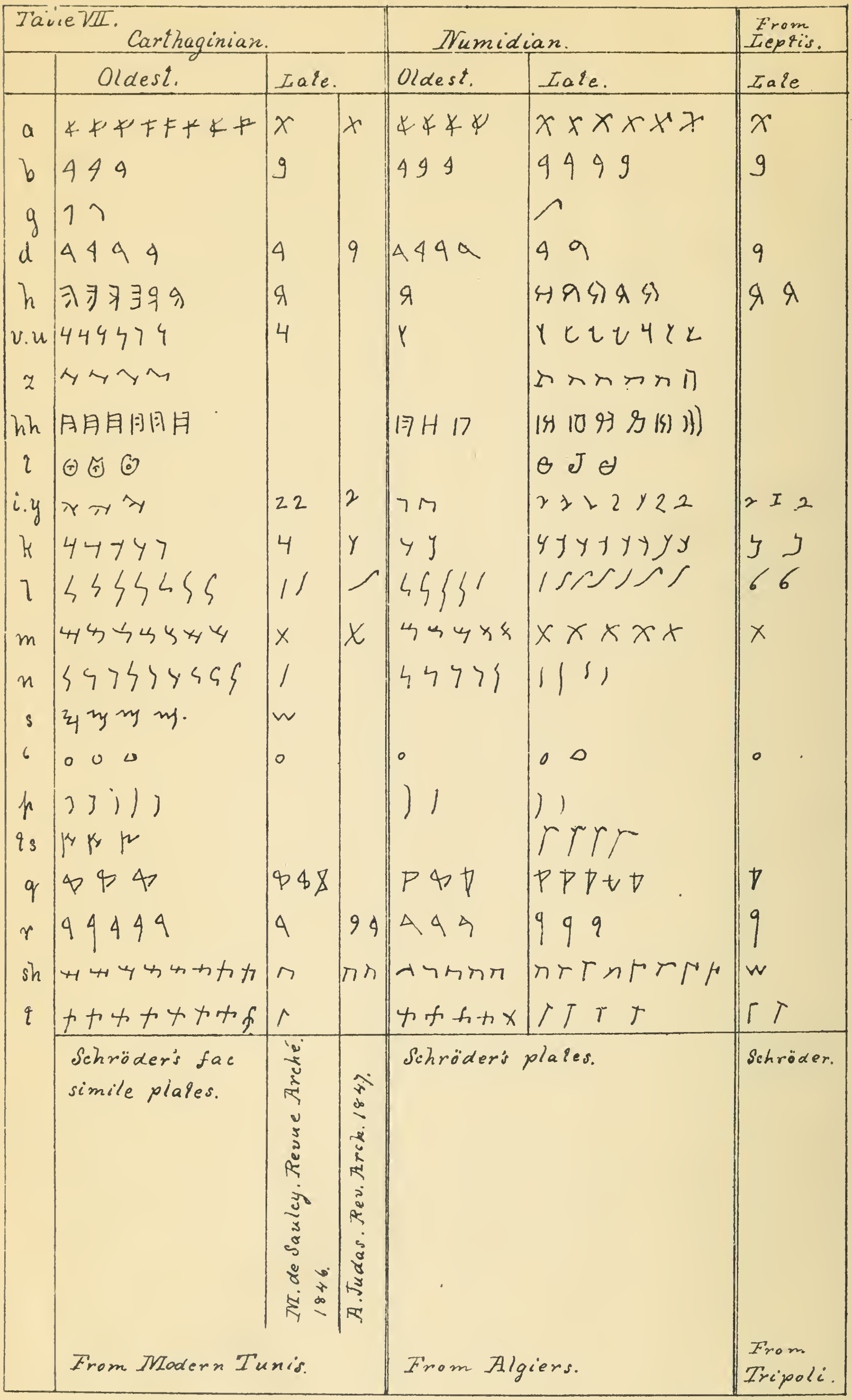


Table VII.
Carthaginian.
Numidian.
From Leptis.
Oldest.
Late.
Oldest.
Late.
Late
a
b
g
d
h
v.u
z
hh
t
i.y
k
l
m
n
s
ʿ
p
ts
q
r
sh
t
Schröder's fac simile plates.
M. de Saulcy. Revue Arché. 1846.
A. Judas. Rev. Arch. 1847.
Schröder's plates.
Schröder.
From Modern Tunis.
From Algiers.
From Tripoli.

J.C.C. Clarke.

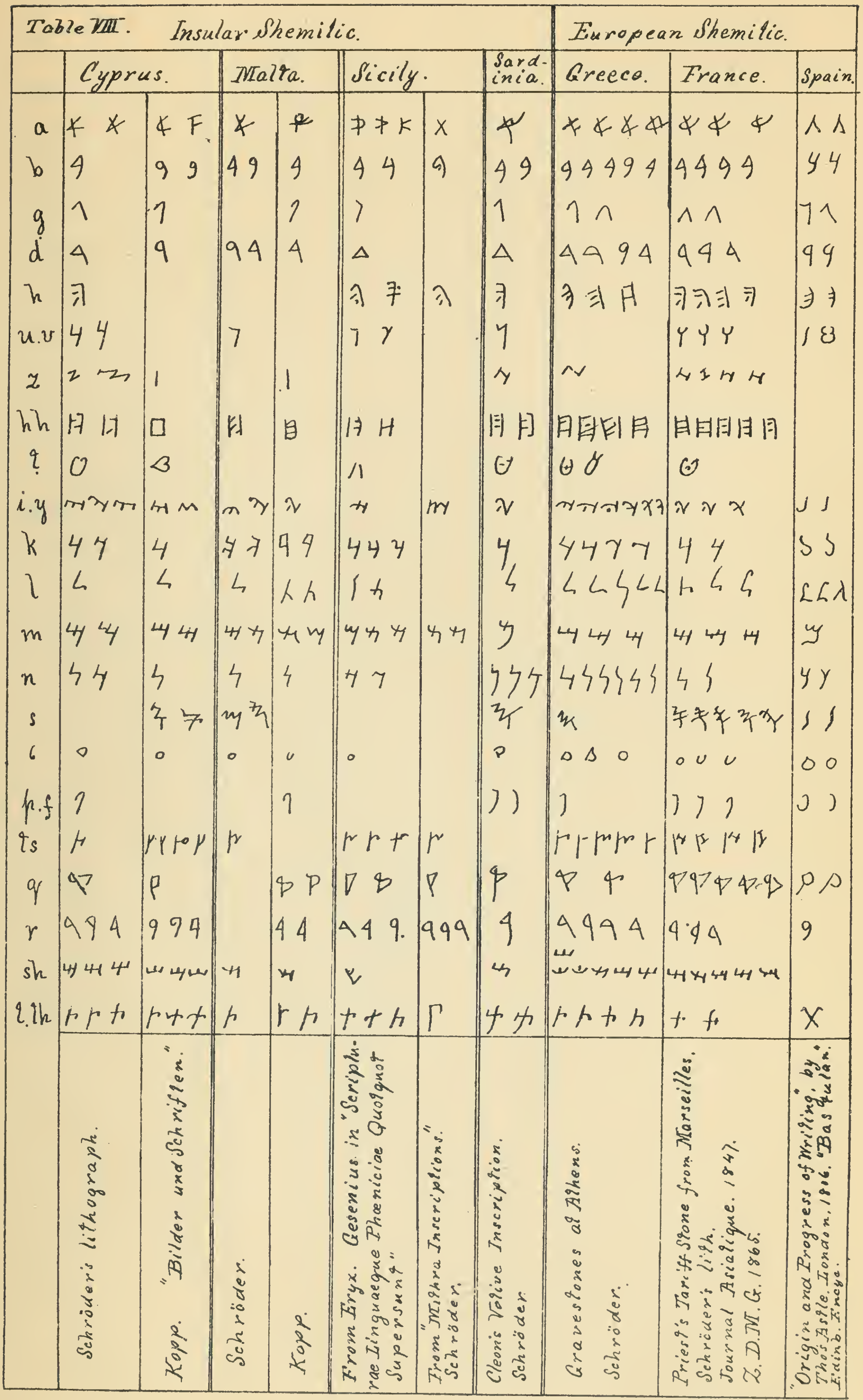


Table VIII. Insular Shemitic. European Shemitic.

Cyprus.
Malta.
Sicily.
Sardinia.
Greece.
France.
Spain.
a
b
g
d
h
u.v
z
hh
ṭ
i.y
k
l
m
n
s
ʿ
p.f
ts
q
r
sh
t.th

Region	Source
Cyprus	Schröder's lithograph.
Cyprus	Kopp. "Bilder und Schriften."
Malta	Schröder.
Malta	Kopp.
Sicily	From Eryx. Gesenius. in "Scripturae Linguaeque Phoeniciae Quotquot Supersunt."
Sicily	"From Mithra Inscriptions." Schröder.
Sardinia	Cleon's Votive Inscription. Schröder
Greece	Gravestones at Athens.
Greece	Schröder.
France	Priest's Tariff Stone from Marseilles. Schröder's lith. Journal Asiatique. 1847. Z. D. M. G. 1865.
Spain	"Origin and Progress of Writing," by Thos. Astle, London, 1806. "Bas Tulan." Edinb. Encyc.

J. C. C. Clarke.

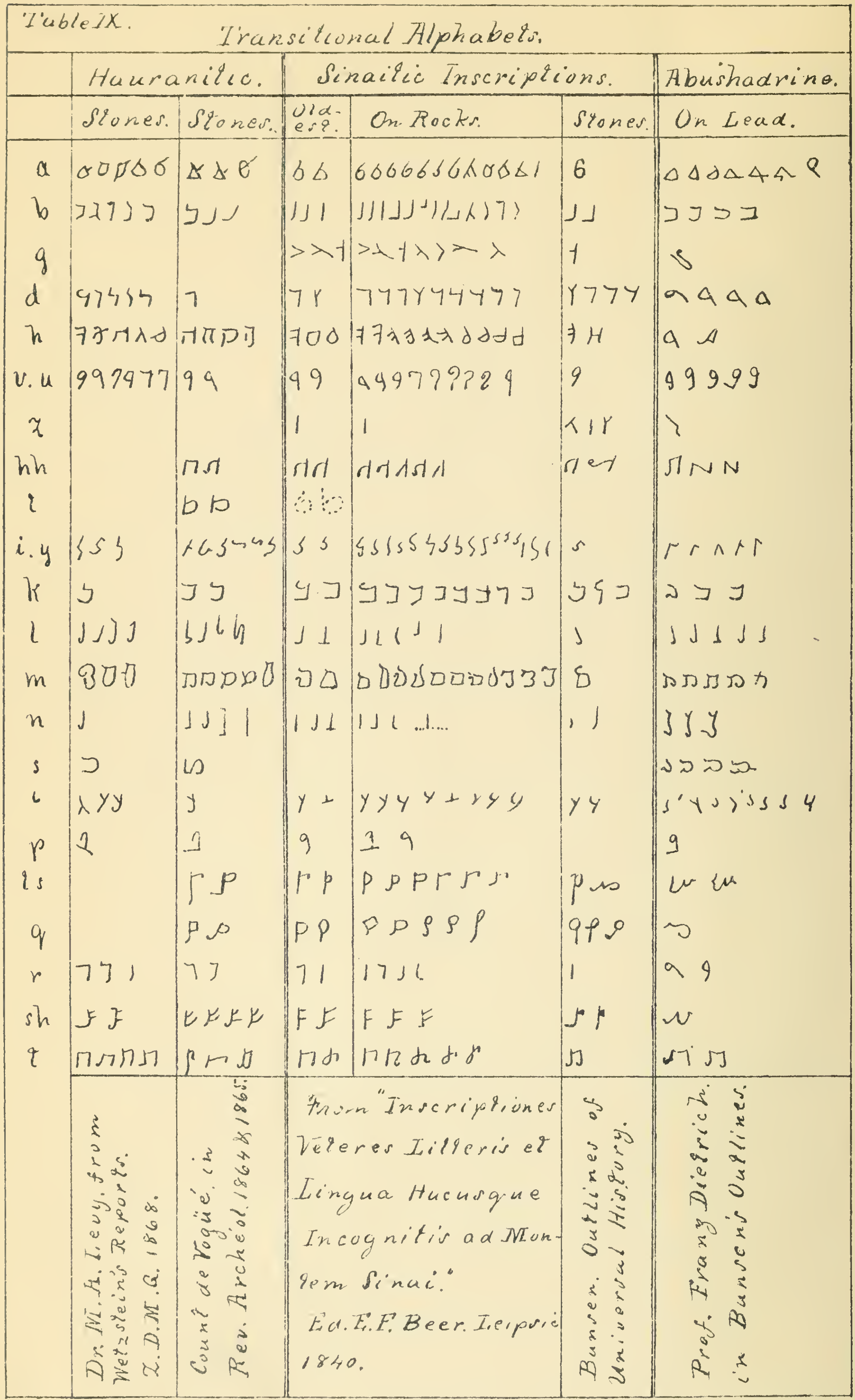


Table IX.
Transitional Alphabets.
Hauranitic.
Sinaitic Inscriptions.
Abushadrine.
Stones.
Stones.
Oldest?
On Rocks.
Stones.
On Lead.
a
b
g
d
h
v. u
z
hh
t
i. y
k
l
m
n
s
‘
p
ts
q
r
sh
t

Dr. M. A. Levy, from Wetzstein's Reports. Z. D. M. G. 1868.

Count de Vogüé, in Rev. Archeol. 1864 & 1865.

From "Inscriptiones Veteres Litteris et Lingua Hucusque Incognitis ad Montem Sinai." Ed. E. F. Beer. Leipsic 1840.

Bunsen. Outlines of Universal History.

Prof. Franz Dietrich. in Bunsen's Outlines.

J. C. C. Clarke.

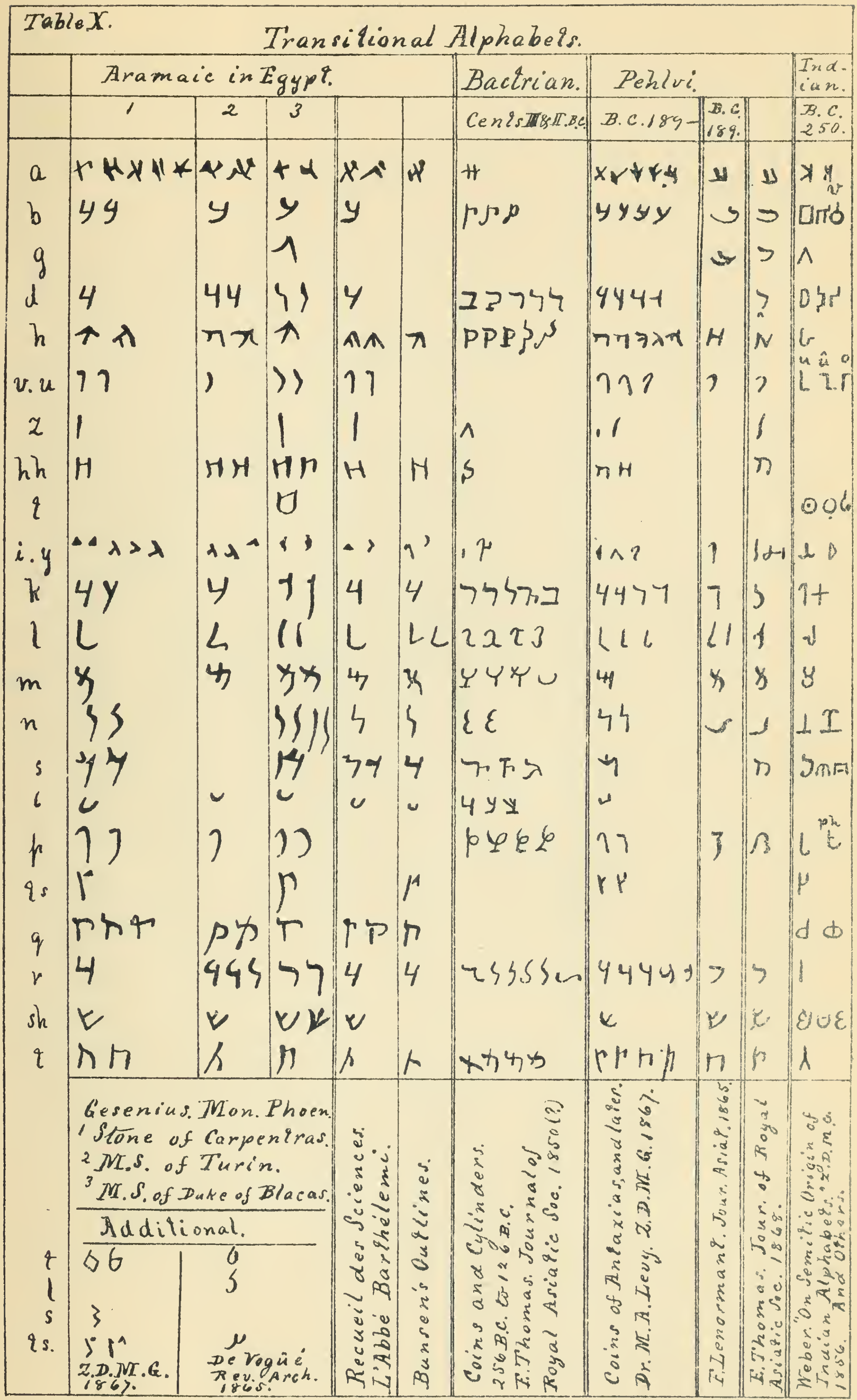


Table X.

Transitional Alphabets.

	Aramaic in Egypt. 1	2	3			Bactrian. Cents III & II B.C.	Pehlvi. B.C. 189–	B.C. 189.		Indian. B.C. 250.
a										
b										
g										
d										
h										
v. u										u û o
z										
hh										
t										
i. y										
k										
l										
m										
n										
s										
‘										
p										ph
ts										
q										
r										
sh										
t										
	Gesenius. Mon. Phoen. 1 Stone of Carpentras. 2 M.S. of Turin. 3 M.S. of Duke of Blacas.			Recueil des Sciences. L'Abbé Barthélemi.	Bunsen's Outlines.	Coins and Cylinders. 256 B.C. to 126 B.C. E. Thomas. Journal of Royal Asiatic Soc. 1850 (?)	Coins of Antaxias, and later. Dr. M. A. Levy. Z.D.M.G. 1867.	F. Lenormant. Jour. Asiat. 1865.	E. Thomas. Jour. of Royal Asiatic Soc. 1868.	Weber. "On Semitic Origin of Indian Alphabets." Z.D.M.G. 1856. And Others.

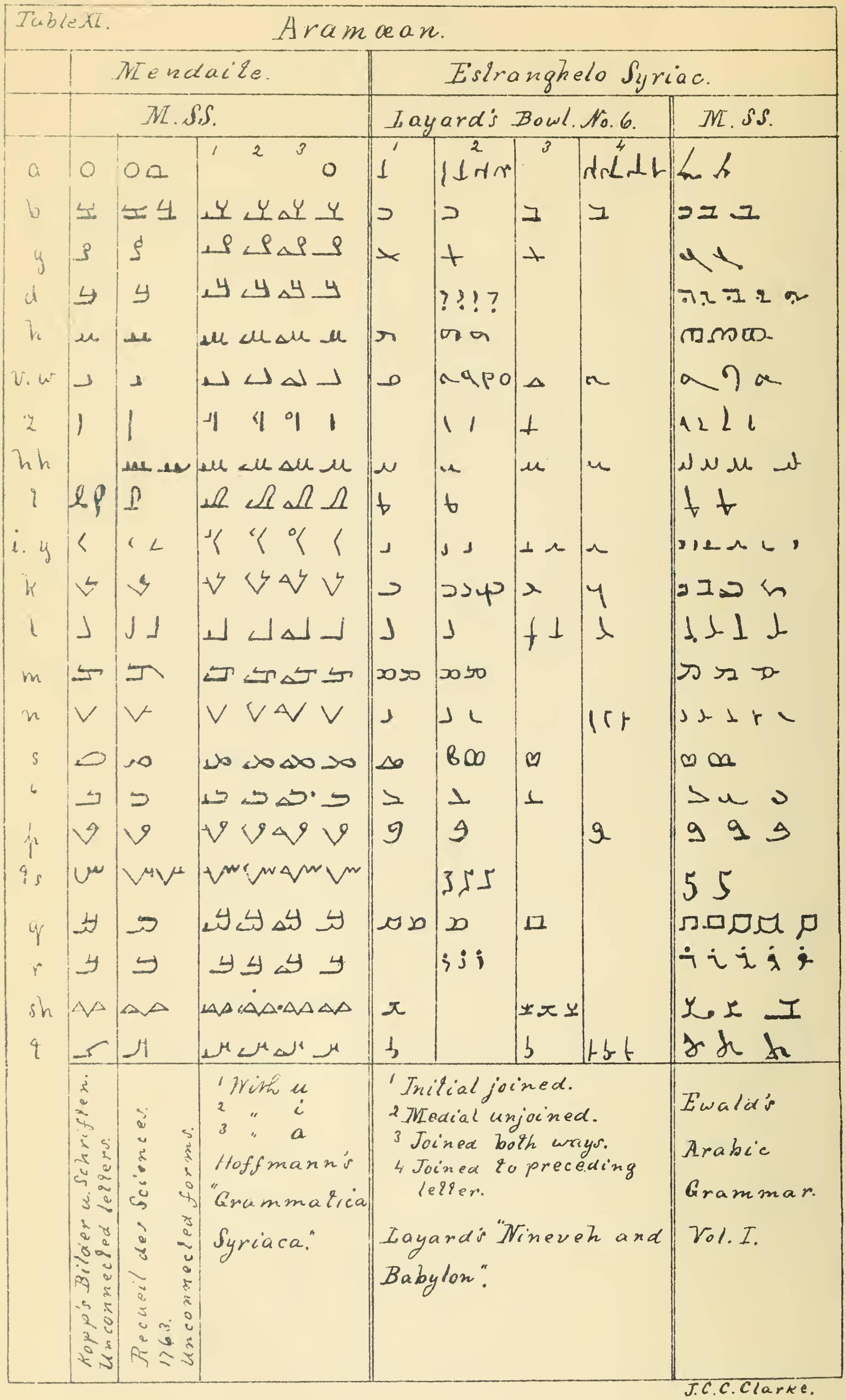
Additional.

t		
l		
s		
ts.	Z.D.M.G. 1867.	De Vogüé Rev. Arch. 1865.

J. C. C. Clarke.

Table XI.

Aramœan.



Mendaite.
Estranghelo Syriac.
M.SS.
Layard's Bowl. No. 6.
M.SS.
1 2 3
1 2 3 4
a
b
g
d
h
v. w
z
hh
t
i. y
k
l
m
n
s
'
p
ts
q
r
sh
t

Kopp's Bilder u. Schriften. Unconnected letters.

Recueil des Sciences. 1763. Unconnected forms.

[1] With u
[2] " i
[3] " a

Hoffmann's "Grammatica Syriaca."

[1] Initial joined.
[2] Medial unjoined.
[3] Joined both ways.
[4] Joined to preceding letter.

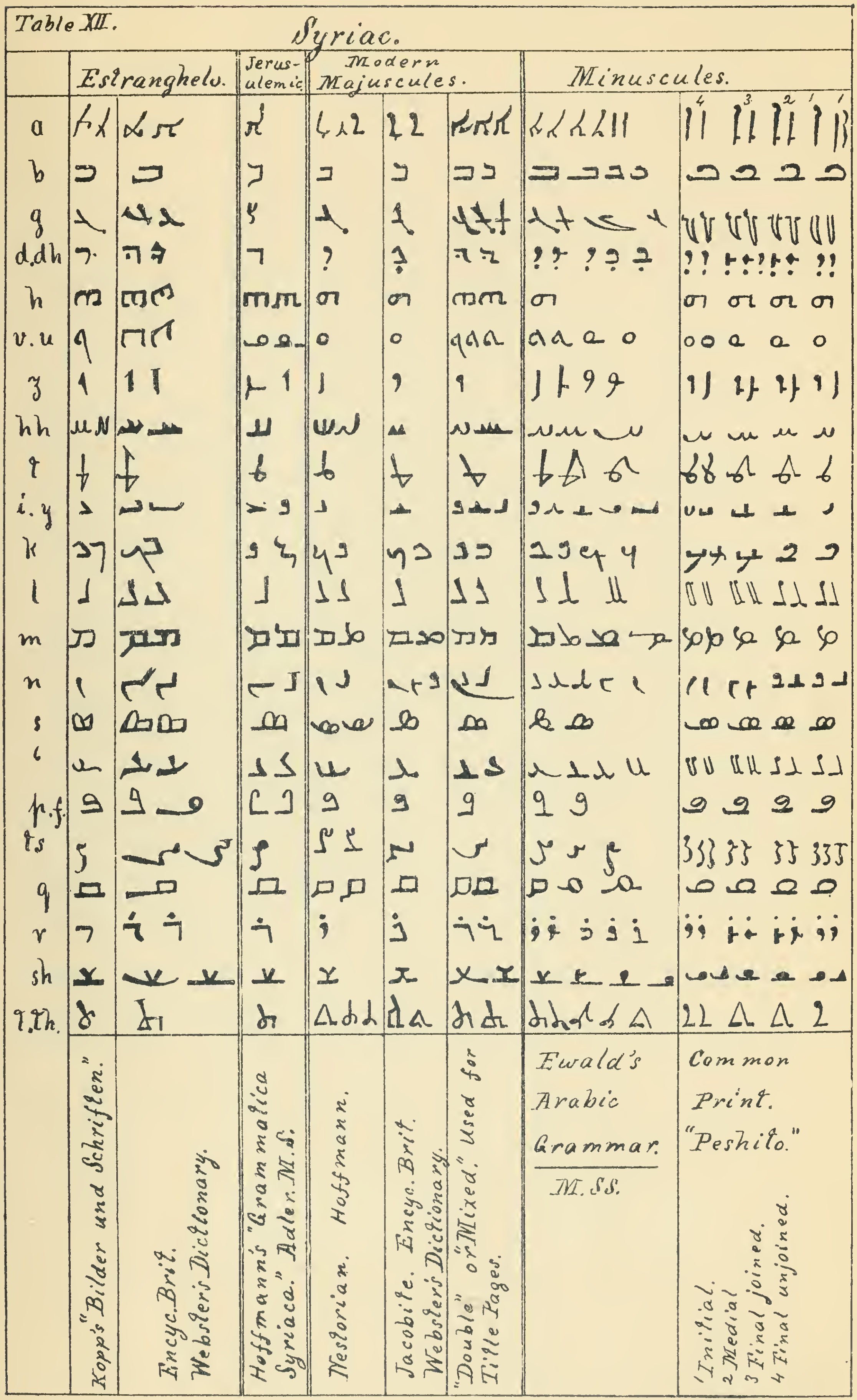
Layard's "Nineveh and Babylon".

Ewald's Arabic Grammar. Vol. I.

J.C.C. Clarke.

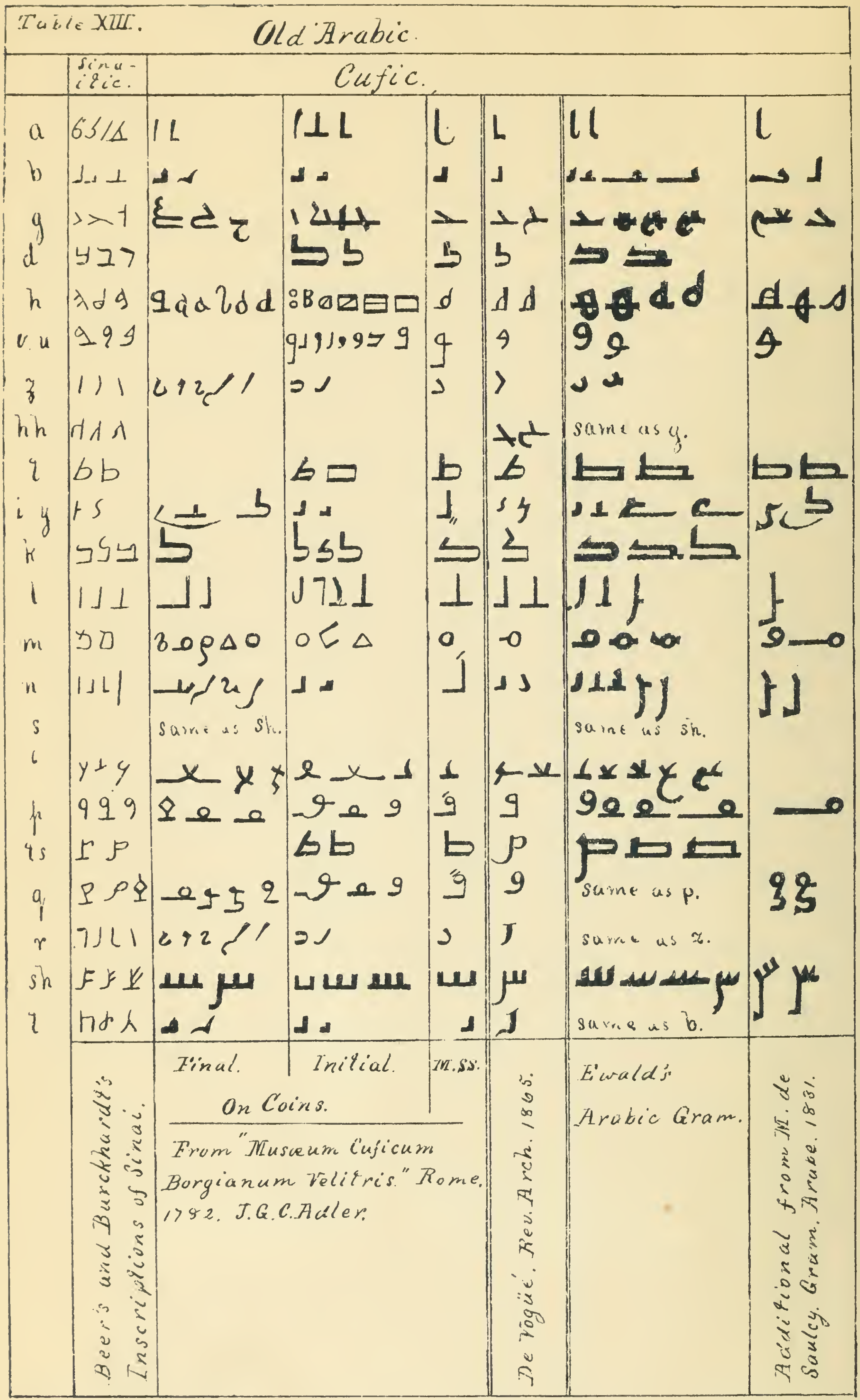
Table XII.

Syriac.


Estranghelo.
Jerusalemic.
Modern Majuscules.
Minuscules.
4 3 2 1 1
a
b
g
d.dh
h
v.u
z
hh
t
i.y
k
l
m
n
s
'
p.f.
ts
q
r
sh
t.th.
Kopp's "Bilder und Schriften."
Encyc. Brit. Webster's Dictionary.
Hoffmann's "Grammatica Syriaca." Adler. M.S.
Nestorian. Hoffmann.
Jacobite. Encyc. Brit. Webster's Dictionary.
"Double" or "Mixed." Used for Title Pages.
Ewald's Arabic Grammar.
M.SS.
Common Print. "Peshito."
1 Initial.
2 Medial
3 Final joined.
4 Final unjoined.

J.C.C. Clarke.

Table XIII. Old Arabic


Sinaitic.
Cufic.
a
b
g
d
h
v. u
z
hh
t
i y
k
l
m
n
s
'
p
ts
q
r
sh
t
same as sh.
same as sh.
same as g.
same as p.
same as z.
same as b.
Final.
Initial.
M.SS.
On Coins.

Beer's and Burckhardt's Inscriptions of Sinai.

From "Musæum Cuficum Borgianum Velitris." Rome. 1782. J.G.C. Adler.

De Vogüé. Rev. Arch. 1865.

Ewald's Arabic Gram.

Additional from M. de Saulcy. Gram. Arabe. 1831.

J.C.C. Clarke.

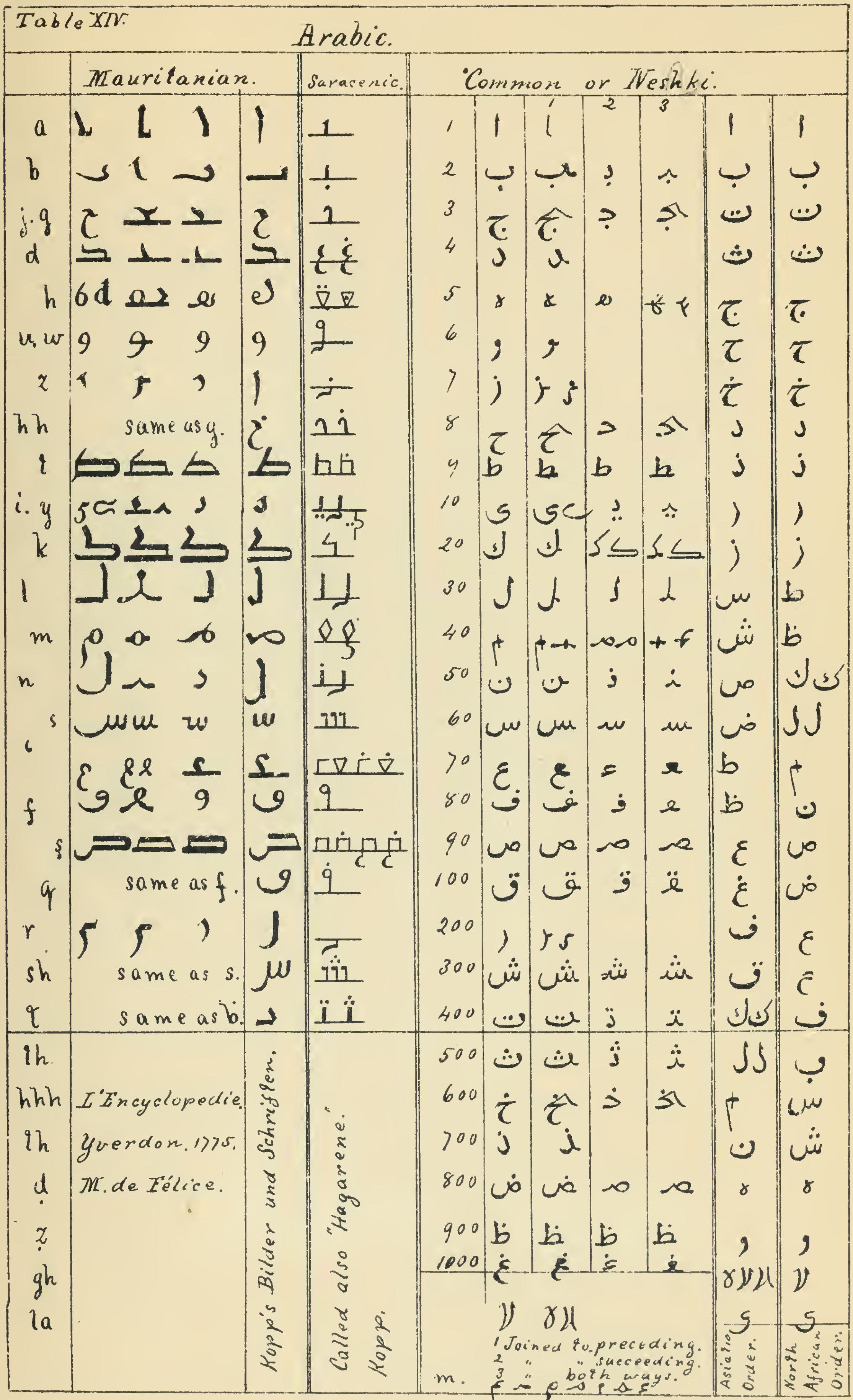
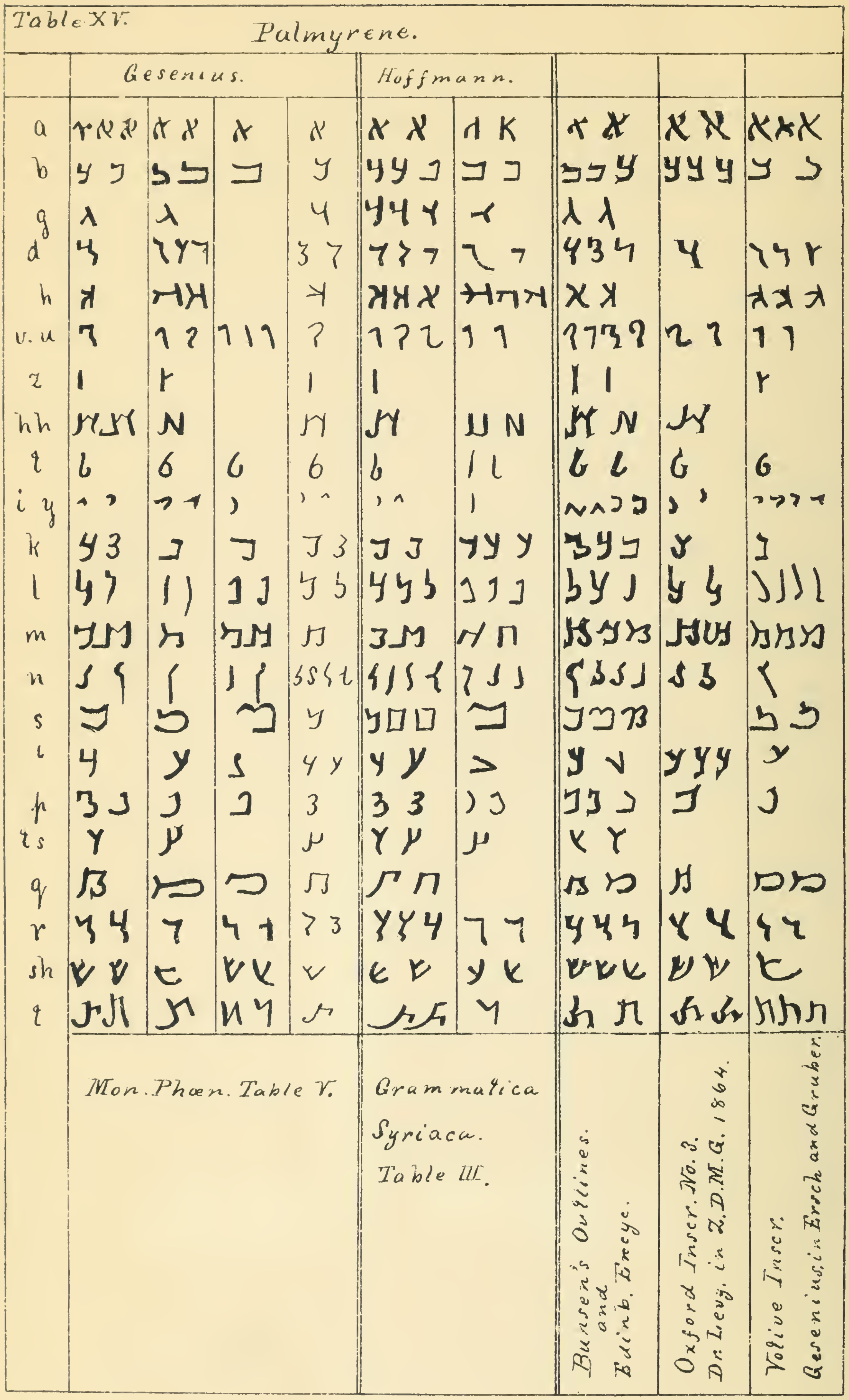


Table XIV.
Arabic.
Mauritanian.
Saracenic.
Common or Neshki.
1
2
3
a
b
j.g
d
h
u.w
z
hh
t
i.y
k
l
m
n
s
'
f
ş
q
r
sh
ŧ
th
hhh
ŧh
ḍ
ẓ
gh
la
1
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
90
100
200
300
400
500
600
700
800
900
1000
same as g.
same as f.
same as s.
same as b.
L'Encyclopedie.
Yverdon. 1775.
M. de Félice.
Kopp's Bilder und Schriften.
Called also "Hagarene."
Kopp.
1 Joined to preceding.
2 " " succeeding.
3 " both ways.
m.
Asiatic Order.
North African Order.

J. C. C. Clarke.

Table XV.

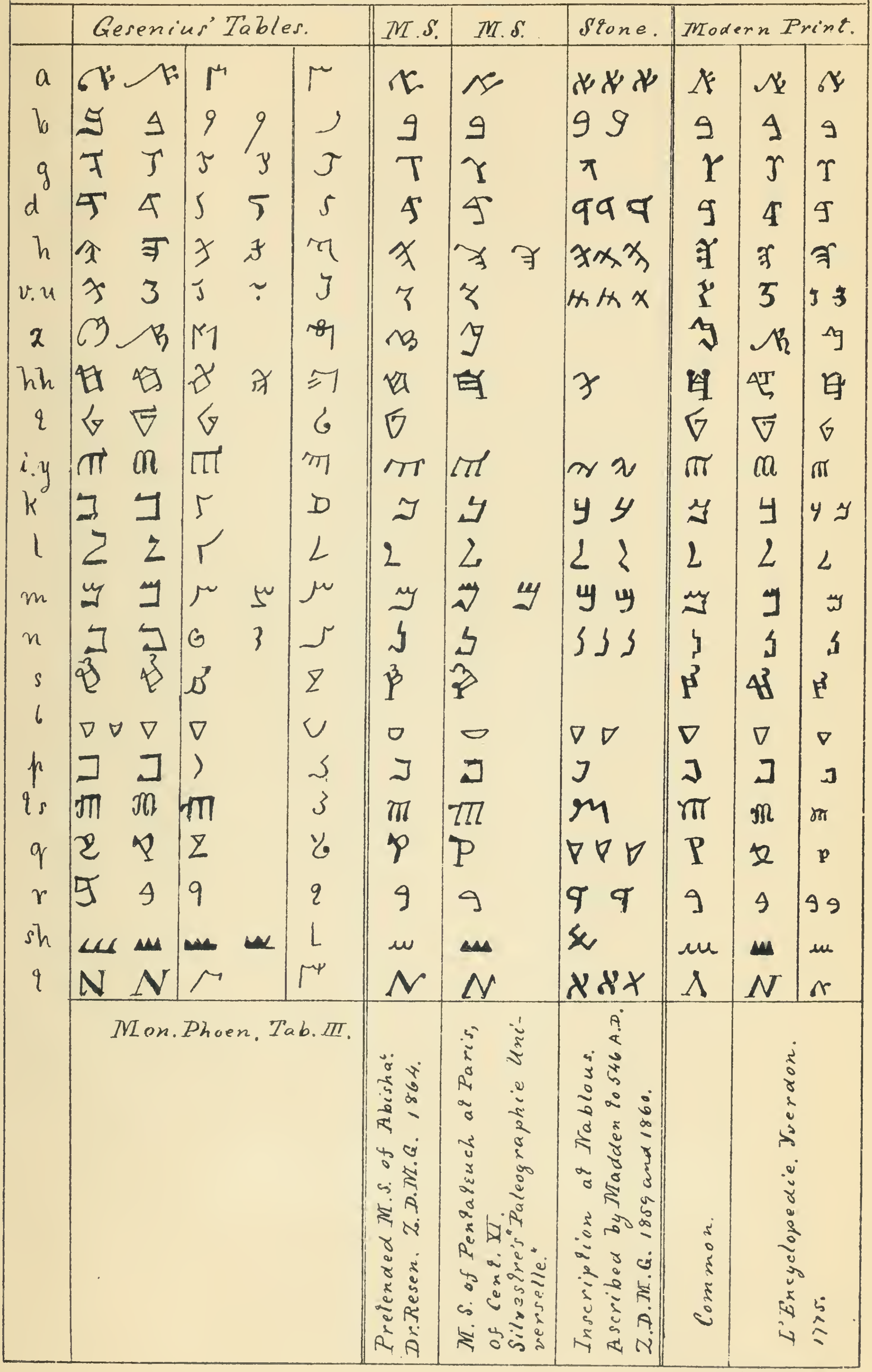
Palmyrene.


Gesenius.
Hoffmann.
a
b
g
d
h
v. u
z
hh
t
i y
k
l
m
n
s
ι
p
ts
q
r
sh
t
Mon. Phœn. Table V.
Grammatica Syriaca. Table III.
Bunsen's Outlines and Edinb. Encyc.
Oxford Inscr. No. 3. Dr Levy, in Z.D.M.G. 1864.
Votive Inscr. Gesenius, in Ersch and Gruber.

J.C.C. Clarke.

Table XVI.

Samaritan.


Gesenius' Tables.
M.S.
M.S.
Stone.
Modern Print.
a
b
g
d
h
v.u
z
hh
t
i.y
k
l
m
n
s
ʿ
p
ts
q
r
sh
t

Mon. Phoen. Tab. III.

Pretended M.S. of Abisha! Dr. Resen. Z.D.M.G. 1864.

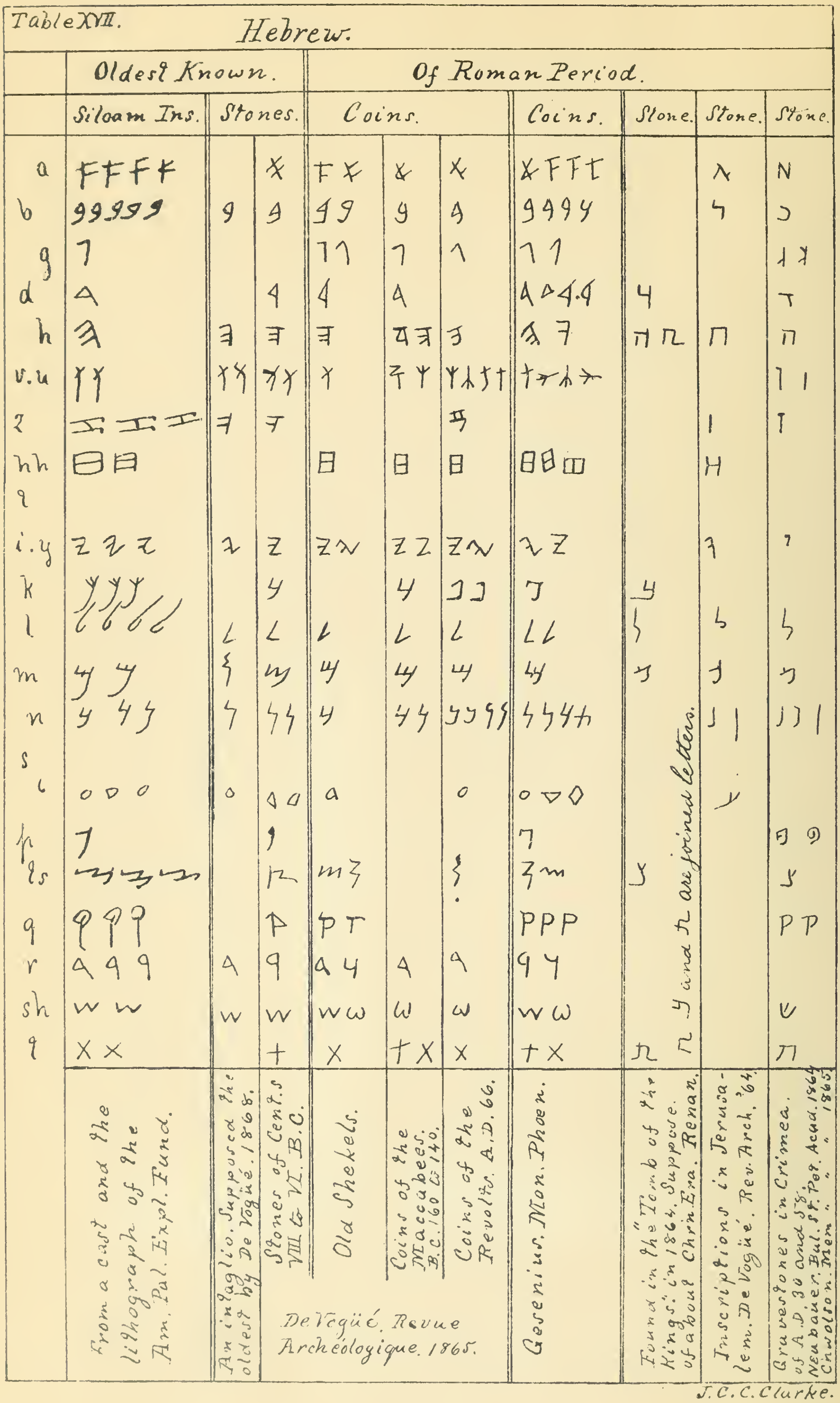
M.S. of Pentateuch at Paris, of Cent. XI. Silvestre's "Paleographie Universelle."

Inscription at Nablous. Ascribed by Madden to 546 A.D. Z.D.M.G. 1859 and 1860.

Common.

L'Encyclopedie. Yverdon. 1775.

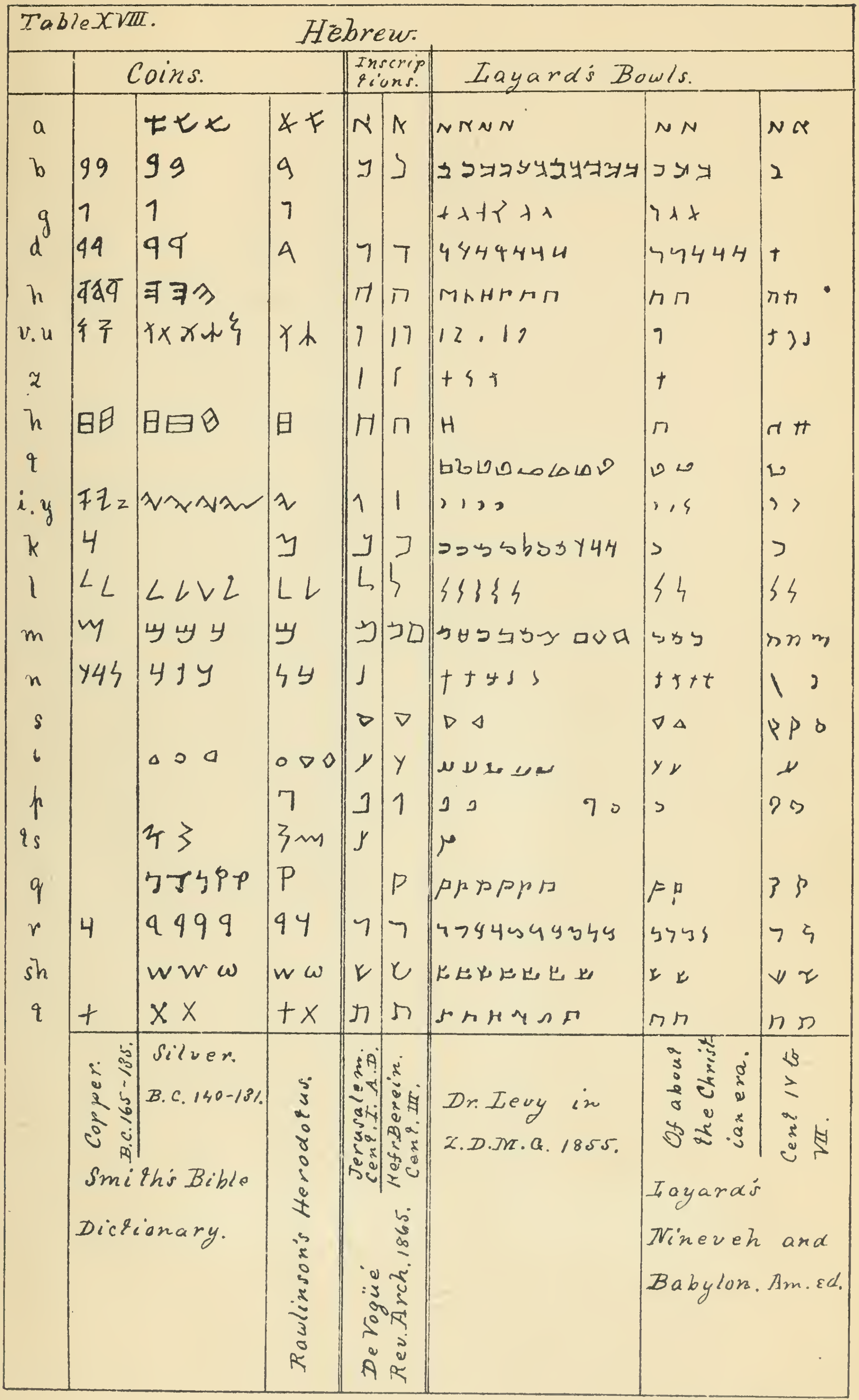
J.C.C.Clarke.

Table XVII.
Hebrew.
Oldest Known.
Of Roman Period.
Siloam Ins.
Stones.
Coins.
Coins.
Stone.
Stone.
Stone.
a
b
g
d
h
v.u
z
hh
t
i.y
k
l
m
n
s
‘
p
ts
q
r
sh
t
and are joined letters.
From a cast and the lithograph of the Am. Pal. Expl. Fund.
An intaglio. Supposed the oldest by De Vogüé. 1868.
Stones of Cent.s VIII to VI. B.C.
Old Shekels.
Coins of the Maccabees. B.C. 160 to 140.
Coins of the Revolts. A.D. 66.
De Vogüé, Revue Archéologique. 1865.
Gesenius. Mon. Phoen.
Found in the "Tomb of the Kings" in 1864. Suppose of about Chr. Era. Renan.
Inscriptions in Jerusalem. De Vogüé. Rev. Arch. '64.
Gravestones in Crimea. of A.D. 30 and 58. Neubauer. Bul. St. Pet. Acad. 1864
Chwolson. Mem. " " 1865

J. C. C. Clarke.

Table XVIII.

Hebrew.

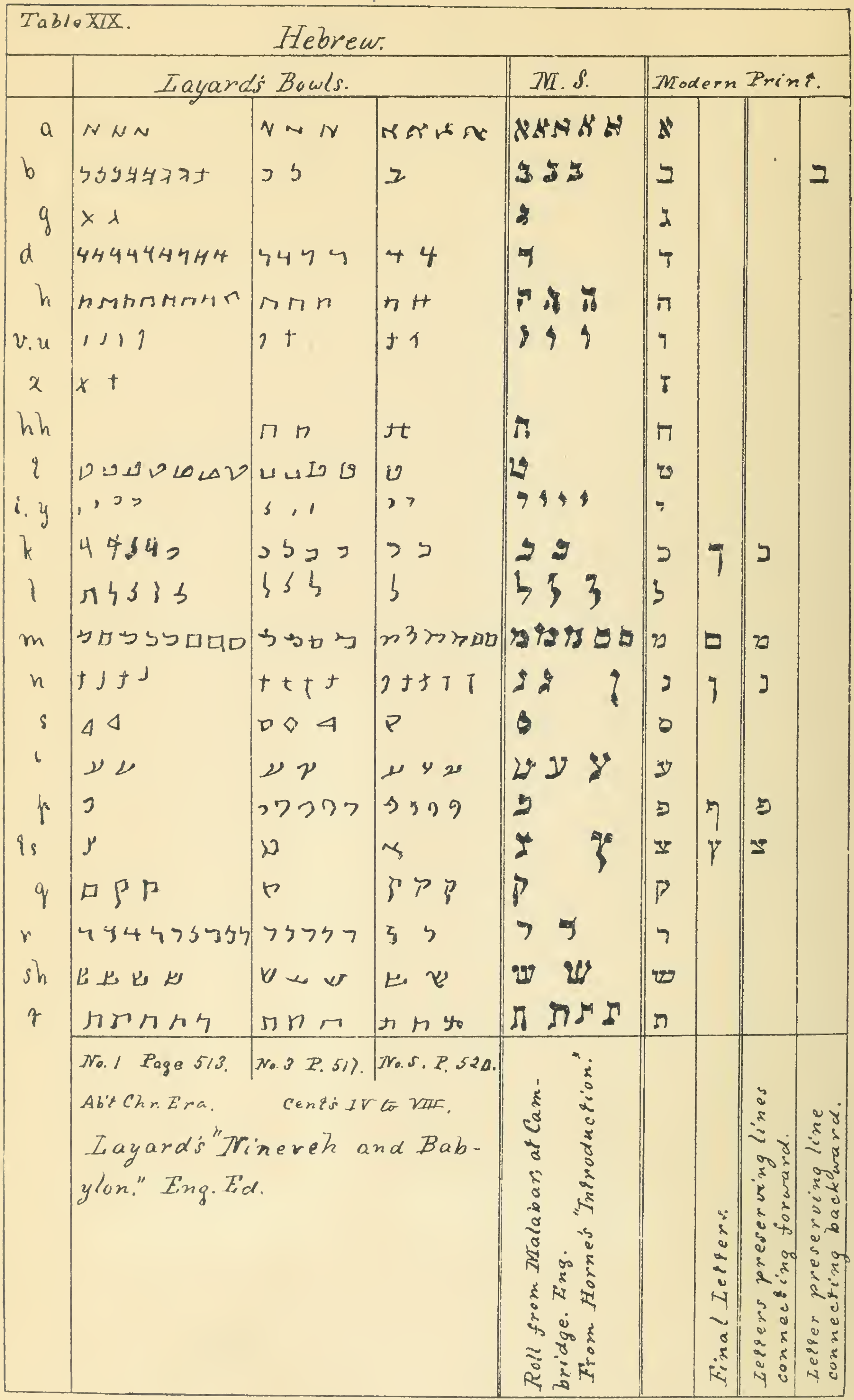


Coins.
Inscriptions.
Layard's Bowls.
a
b
g
d
h
v. u
z
h
t
i. y
k
l
m
n
s
'
p
ts
q
r
sh
t
Copper. B.C. 165-135.
Silver. B.C. 140-131.
Smith's Bible Dictionary.
Rawlinson's Herodotus.
Jerusalem. Cent. I. A.D.
Kefr Berein. Cent. III.
De Vogüé Rev. Arch. 1865.
Dr. Levy in Z.D.M.G. 1855.
Of about the Christian era.
Cent. IV to VII.
Layard's Nineveh and Babylon. Am. ed.

J. C. C. Clarke.

Table XIX.

Hebrew.



	Modern Print.	Final Letters.	Letters preserving lines connecting forward.	Letter preserving line connecting backward.
a	א			
b	ב			ב
g	ג			
d	ד			
h	ה			
v. u	ו			
z	ז			
hh	ח			
t	ט			
i. y	י			
k	כ	ך	כ	
l	ל			
m	מ	ם	מ	
n	נ	ן	נ	
s	ס			
ʻ	ע			
p	פ	ף	פ	
ts	צ	ץ	צ	
q	ק			
r	ר			
sh	ש			
t	ת			

Layard's Bowls.

No. 1 Page 513. No. 3 P. 517. No. 5. P. 520.

Ab't Chr. Era. Cent's IV to VIII.

Layard's "Nineveh and Babylon." Eng. Ed.

M. S.

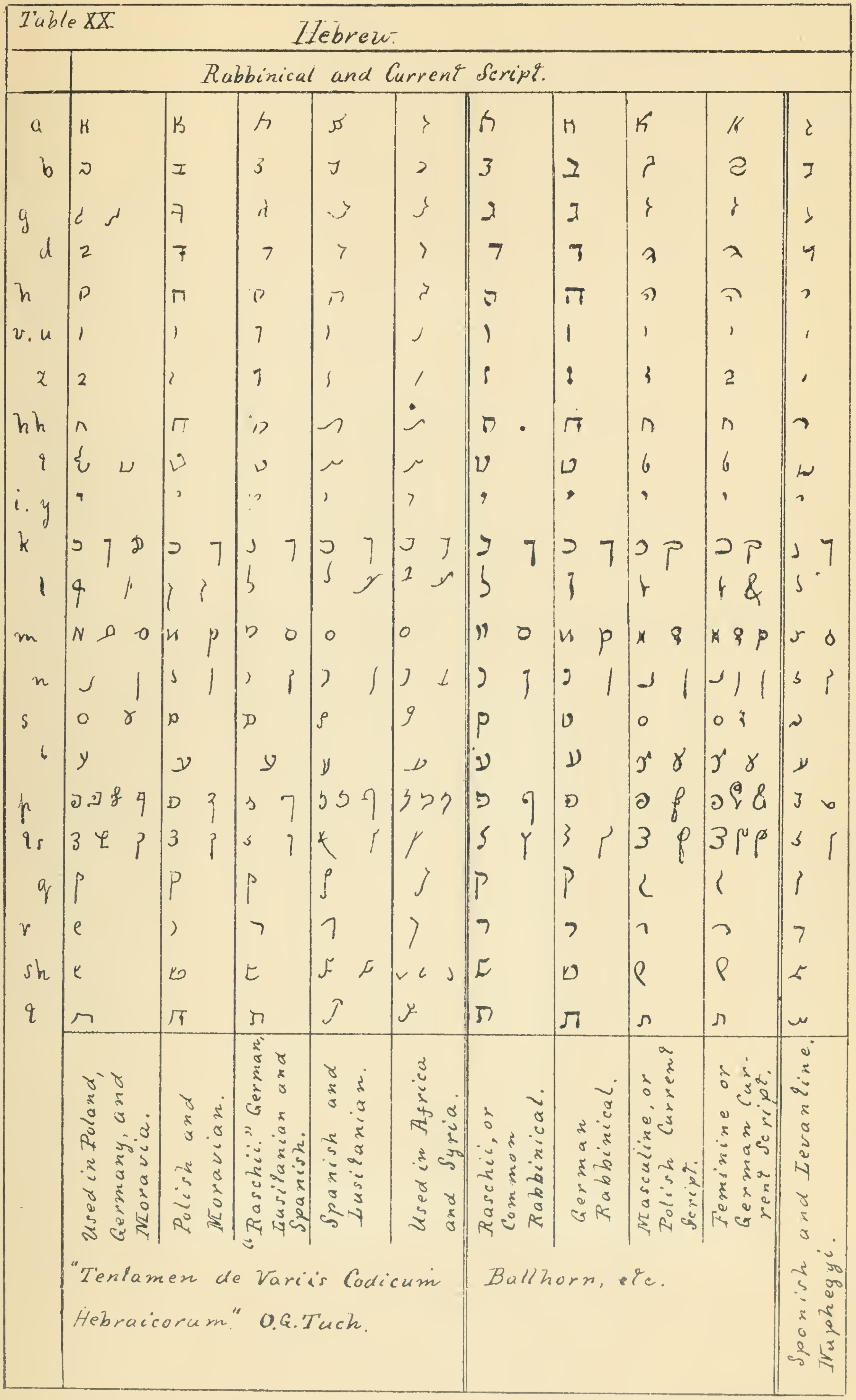
Roll from Malabar, at Cambridge. Eng. From Horne's "Introduction."

J.C.C. Clarke.

Table XX.

Hebrew.

Rabbinical and Current Script.


a
b
g
d
h
v. u
z
hh
t
i. y
k
l
m
n
s
'
p
ts
q
r
sh
t
Used in Poland, Germany, and Moravia.
Polish and Moravian.
"Raschii." German, Lusitanian and Spanish.
Spanish and Lusitanian.
Used in Africa and Syria.
Raschii, or Common Rabbinical.
German Rabbinical.
Masculine, or Polish Current Script.
Feminine or German Current Script.
Spanish and Levantine. Waphegyi.

"Tentamen de Variis Codicum Hebraicorum." O.G. Tuch.

Ballhorn, etc.

J.C.C. Clarke.

PJ
3018
.C6 Clarke J

22/1/73

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